

Assessing the impact of the 2010 Browne Review and the 2010 Amendment to the Higher Education  
Act 2004 using Nottingham Trent University as a case study

Document Five: An investigation into the nature of the student demographic accessing Nottingham  
Trent University following the introduction of higher fees in September 2012

Submitted by

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## **ABSTRACT**

The 2012/13 academic year saw the introduction of the most significant changes to the funding of higher education in England for over fifty years. This followed the publication of the Browne Review in October 2010 (Browne, 2010), which recommended that the cap on tuition fees be removed and that universities be allowed to charge fees that they felt were appropriate. It further recommended that the funding of England's higher education system shift away from one that is largely funded by the taxpayer to one that is, for the most part, funded privately by graduates from their future earnings. The subsequent government White Paper published later in 2011 incorporated some features of Lord Browne's recommendations: loans would be offered to all students to cover fees, to be repaid only when graduates were earning over a certain threshold. However, the government proposed an absolute cap on fees of £9,000 per year. Those universities charging fees of over £6,000 per year would be obliged to contribute to a national scholarships programme, and there would be a tougher regime of sanctions encouraging these universities to widen access. These new measures were challenged at the time from a variety of sources: politicians, the press and academic research all suggested that this change in funding would ostracise students who came from backgrounds that did not traditionally access higher education.

Two years after the introduction of higher fees, this thesis investigates whether there has been any change to the nature of the student demographic accessing Nottingham Trent University (NTU). For some, going to university is seen as a method of ensuring social mobility, so if there is any change in the demographic of the student accessing university following the change in funding, this could have a far-reaching impact across the whole of society. Additionally, given that universities are now increasingly run as businesses as well as places of learning, any changes to the student demographic could have a disruptive impact on the business model of universities. Given that the change in funding was relatively recent, there has been limited work in this field of research.

This thesis examines a number of hypotheses in order to understand whether there has been a change in the student demographic accessing NTU following the introduction of higher fees. The analysis looks at not only the socio-economic composition of the student population, but also students' academic credentials on entry, the distance between their home and the place of study, their choice of subject, and what actions and interventions the University has taken in light of its increased fees.

Using secondary data from the University's student data system, supplemented by other external data, this investigation looks at the composition of the first-year England-domiciled undergraduate student population from the 2008/09 academic year to the 2013/14 academic year to test a number

of hypotheses that emerged from a review of current literature relating to the student decision-making process. In order to ensure validity and reliability, the records of the entire cohort for each year of entry were used rather than a sample approach.

The findings suggest that, contrary to the popular opinion that was so vociferous at the time of the Browne Review, there has been no erosion in the number of students from deprived backgrounds accessing university. Instead, for NTU at least, the proportion of students from the most deprived backgrounds has actually increased following the introduction of higher fees. Aligned to this slight change to the socio-economic composition of the student population is a potential decline in the average tariff points on entry to the University. However, there has been little change to the other aspects of the demographic of the student population, namely the distance travelled, the subjects studied, and the shift in university policy with regard to the academic attainment it requires from its students to access its courses.

Whilst the results noted above are specific to NTU, the University shares a position in the English higher education market with other similar universities offering similar courses to a similar demographic of student. In terms of geographical location, NTU shares a region with a number of these similar higher education institutions, so it may be valid to generalise the findings of this thesis to other similar universities in England.

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## Chapter 1: Introduction and Research Context

### Background

The idea for this research emerged following the publication of the 2010 Browne Review and the resultant 2010 Amendment to the Higher Education Act 2004. Throughout the past fifty years governments have sought to balance the cost of higher education with the benefits of having an educated population in order to remain globally competitive. This has resulted in a trend for governments to shift the cost of higher education away from the state and onto students and their families (Miller, 2010). The implication of this 'cost-sharing agenda' (Johnstone & Marcucci, 2010:51) is that higher education is no longer viewed as being a public good that benefits both society and the economy, but is rather viewed as a private good that benefits individuals, who pay for this benefit in the form of tuition fees (Wilkins *et al.*, 2012).

University tuition fees were first introduced in the United Kingdom (UK) in 1998 following the publication of the 1997 Dearing Report (NCIHE, 1997). Under this fee regime, undergraduate students paid a fee of up to £1,000 depending on their parental income. This 'cost-sharing agenda' was expanded further in 2006, with the introduction of the variable tuition fee of £3,000. Under both these fee regimes, the state still funded a significant part of the cost of higher education. However, this changed following the 2010 Browne Review and the subsequent 2011 government White Paper (UK government, Department of Business, Innovation and Skills, 2011), which allowed English universities to set their own tuition fees up to a maximum of £9,000 per year. These fees and the associated living costs of being a student are now repaid in full by students following graduation (subject to a minimum earning threshold), via the government's student loan vehicle.

There was a strong reaction to this change in how universities in England were to be funded, but the UK government was not alone in shifting the cost of higher education to the student. The policy of students contributing towards their higher education was already in place in a number of countries such as Australia, Italy, Japan, the Netherlands, New Zealand, Spain and the United States (US) (Miller, 2010). Whilst Altbach (2002:96) suggests that this shift in how universities are funded may be due in part to the ideology of Conservative politicians, other political systems not necessarily considered 'Conservative' (such as China) have also implemented a similar policy of cost sharing (Mok & Lo, 2007).

This change in funding higher education in England has many practical consequences. The new tuition fees, on the face of it, could increase the level of debt that students graduate with from £12,000 to up

to £27,000 (BBC, 2012). Some groups appear to be more price-sensitive to tuition fees than others, as students from lower socio-economic and certain ethnic groups are more averse to debt (Paulsen & St John, 2002; Callender & Wilkinson, 2003; Callender & Jackson, 2005). Whilst there is evidence that the last increase in fees in 2006 to £3,000 did not deter young people from applying to university (Dearden *et al.*, 2008), the significant increase in tuition fees from £3,375 in the 2011/12 academic year to up to £9,000 in the 2012/13 academic year may have a greater impact on demand. Wilkins *et al.* (2012) suggest that the wider economy (the downturn in the UK and worldwide) and increasing graduate unemployment may also impact on the demand for higher education.

This change in funding now means that universities no longer have a substantial government block teaching grant to provide a financial safety net. Whilst universities have traditionally competed against each other to attract the best students, another consequence of the changing fee regime means that universities are also competing against the emergence of commercial providers and alternative delivery methods of higher education such as the BPP College of Professional Studies, which became the first commercial organisation to be granted award-bearing powers in 2007. Alderman (2010) notes that these commercial organisations are able to enhance their reputation by offering small group tuition alongside state-of-the-art teaching facilities. Vasager (2011) observes that commercial organisations are also offering 'accelerated' courses: these are delivered over a longer day and a greater number of teaching weeks, enabling students to complete an undergraduate degree in two years rather than the traditional three years, at a significantly lower price. It is this lower price offered by commercial higher education providers that Wilkins *et al.* (2012) suggest may be attractive to potential students, especially as these providers tend to offer courses in Accounting, Law and Business, which students may perceive as leading to higher-paid careers post-graduation. Other new entrants into the higher education market are universities such as the New College of Humanities and the University of Buckingham.

The increase in tuition fees in England is still a fairly recent phenomenon, and despite vocal political opposition at the time of its implementation, universities have to assume that these higher fees are here to stay. Universities therefore need to understand the impact of the 2010 Browne Review and the 2010 Amendment to the Higher Education Act 2004 on the nature of the student population and the choices that students make. Any change to the student demographic will shift the landscape that these universities operate in from both a pedagogic and a business perspective. This thesis uses NTU as a case study in order to investigate the nature of the student population following the introduction of higher fees in September 2012, with the overall aim of providing a basis of new market information that can be used by university management to inform and influence strategy. This thesis uses key themes already identified in four Doctorate in Business Administration (DBA) documents to guide this

research, taking into account any previously identified areas of improvement. In accordance with the overall aim of this study to provide information for university management, three key objectives will be pursued:

1. An update of the knowledge within the field of literature relating to the influence of tuition fees on student choice, as well as other significant factors such as socio-economic demographics and universities themselves.
2. The identification and definition of hypotheses that emerged from the updated literature review. The testing of the resultant hypotheses in order to understand the nature of the student population following the introduction of higher fees.
3. A review of the nature of any changes that resulted from the increased fees and the impact this may have on NTU from both a pedagogic and a business perspective.

Through the three objectives noted above, this thesis will also aim to provide some insight for the university sector in general. The current field of literature concerning the impact on students following the most recent increase in fees is very limited. No doubt this is due both to the relative recentness of the changes in funding and the scarcity of meaningful data. Furthermore, this study seeks to examine the student population generally in terms of socio-economic composition, subject choice and academic attainment, rather than concentrating on a particular element, which is primarily the focus of existing literature (Reay, 1998; Evans, 2009; Mathers & Parry, 2009; Davies & Guppy, 1997; Hansen, 1997; Van de Werfhorst *et al.*, 2003; Mocetti, 2008; Heller, 1997; Leslie & Brinkman, 1987; Paulsen & St John, 2002; Dearden *et al.*, 2004; Neill, 2004).

The thesis is structured into eight chapters:

Chapter 1 presents the background and context for this research, and outlines the research aims and why this study makes a contribution to research.

Chapter 2 provides a summary of the previous work undertaken during this DBA project, and explains how identified findings and improvements have influenced and informed this present study.

Chapter 3 gives an overview of the pertinent literature on student choice, from which the research hypotheses evaluated in this present study emerged.

Chapter 4 details the methodology used in this piece of research, explaining the chosen ontological and epistemological stance, the methodological basis of the study, the research strategy and methods, and ethical considerations and limitations.

Chapter 5 presents the findings and outcomes from the testing of the hypotheses described in Chapter 3.

Chapter 6 is a discussion and evaluation of the findings, using the literature review in Chapter 3 as a point of reference.

Chapter 7 presents the conclusions and recommendations for NTU and the wider English higher education system

Finally, Chapter 8 provides reflections on this piece of research and an outlook on possible future research.

## **Chapter 2: Previous work**

### **Introduction**

This thesis represents the fifth and final piece of substantial research undertaken to assess the impact of the 2010 Browne Review and the 2010 Amendment to the Higher Education Act 2004 on the nature of the student population and the choices students make, using NTU as a case study.

Whilst this has been the overarching aim throughout the DBA journey, the four documents prior to this thesis have sought to answer different research questions in order to fulfil this aim. This chapter, therefore, will seek to provide both a review and summary of the work already completed as part of the DBA. It will present the key findings that are not only of interest from a research perspective but also provide the context in both a wider and conceptual sense for this final piece of research, Document Five.

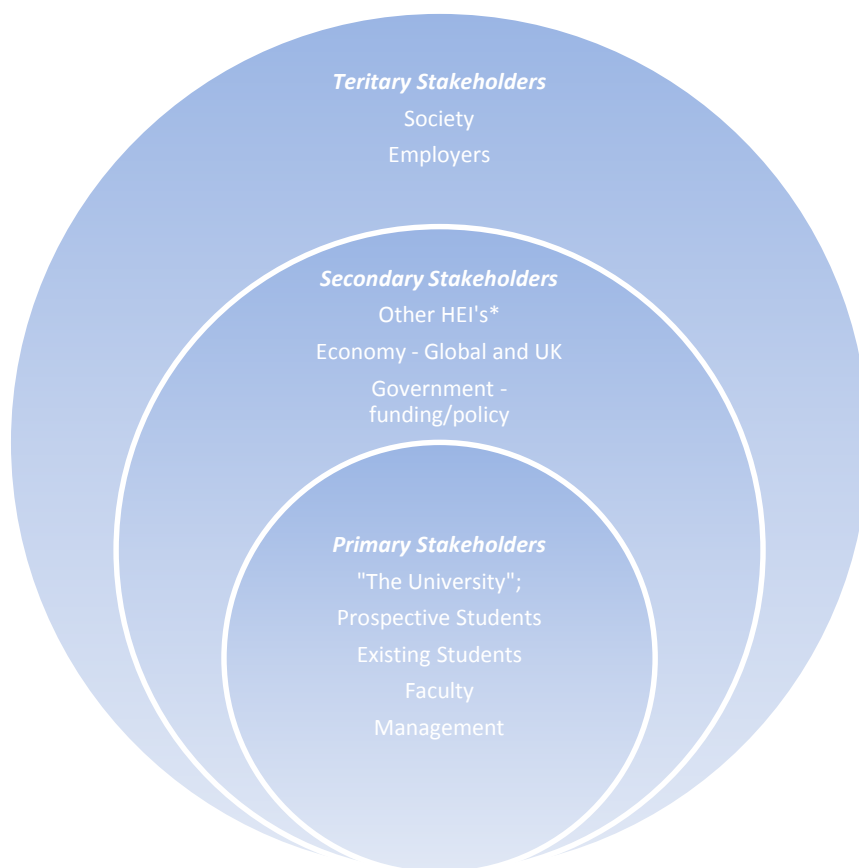
### **Document Two: A critical review of literature**

Document Two provided a critical review of the literature concerning aspects of the higher education system relevant to this study. At the time of writing Document Two (late 2011), the changes to the funding of higher education in England were still very much at the fledgling stage. The debate on how higher education should be funded has been present since the end of World War II. This document:

- Explained the framework used to identify the conceptual domain and methodology used for the classification of the literature.
- Considered the bodies of literature associated with higher education systems.
- Analysed the literature against the conceptual domain and presented the results of the analysis.
- Presented a conclusion and a revised conceptual framework, and specified a research questions for subsequent work.

### *The Conceptual Framework Used to Guide Document Two*

The conceptual model of this research used stakeholder analysis, adapted from Kotey *et al.* (1998), which breaks down the stakeholders into primary, secondary and tertiary stakeholders (Figure 1). The review concentrated on the primary stakeholders: prospective students, existing students, management and faculty. In addition, it was suggested that other levels of stakeholders have a significant influence on the primary stakeholders, namely: other higher education institutions, government funding and policy, society and employers.



**Figure 1: Stakeholder Analysis Used to Review the Literature in Document Two**  
Kotey *et al.* (2008)

From this review a number of significant influences on the higher education system emerged. Whilst each influence was independently identified in the literature, it was suggested that each influence had an impact on one or more other influences. The framework also included the stakeholders who had



been identified in the original conceptual framework and key drivers who are informed and influenced by those stakeholders.

### *Findings*

Table 1 provides a summary of the key findings of the critical literature review that performed a stakeholder analysis of the conceptual model described previously. Table 1 is structured to reflect the concentric levels of stakeholders, namely primary, secondary and tertiary. Against each level of stakeholder, the influences they exert over higher education systems are briefly discussed.

**Table 1: Key Findings of Document Two – Critical Literature Review**

Stakeholder Level	Stakeholder	Findings	Reference
Primary	The University	<p>The mechanisms for deciding how universities are funded influence university strategies in terms of the quality of teaching, and increasing the focus on achieving efficiency, effectiveness and financial performance. Other impacts include a compromise between Teaching and Research activities and the focus of research away from merely useful outputs to income generation.</p> <p>Universities are having to behave in a more commercial manner to attract students, and have started to pay increasing attention to marketing, publicity, targeting key groups (or customers), and the creation of universities as 'brands'.</p>	<p>Bryson (2004)</p> <p>Chapleo (2010)</p> <p>Leslie &amp; Brinkman (1987)</p> <p>Strehl <i>et al.</i> (2007)</p> <p>Winefield <i>et al.</i> (2003)</p>
	Prospective Students	<p>Overall the demand for higher education may be very price inelastic at the macro level, as a number of studies suggest that the increase in tuition fees has limited impact on student enrolments. However, this may not be true for all students, notably those students from lower socio-economic backgrounds, who are more price-sensitive to tuition fees.</p> <p>The availability of financial aid does have some positive effect on enrolments of students from less affluent homes. However, the uncertainty regarding how much aid is available at the point of application to university and the variations of aid between institutions mean that these students are using the published tuition fees to make decisions about going to university.</p>	<p>Carneiro &amp; Heckman (2002)</p> <p>Heller (1997)</p> <p>Leslie &amp; Brinkman (1987)</p> <p>Neill (2004)</p>

	Existing Students	<p>A lot of the rhetoric in the government's White Paper of 2011 claimed that the increase in tuition fees would put '<i>students in the driving seat</i>'. The introduction of higher fees may lead to existing students taking a more consumerist approach. Some students suggest having a higher level of expectations regarding levels of support and ancillary services such as libraries. For others, an increase in tuition fees leads to students coming to university not to read a subject and enjoy the experience but to gain a good degree (2.1 or better) in order to secure a career on graduation. Students' pursuit of a good CV has led to an increase in demand for more vocational aspects to subjects.</p> <p>There is also the suggestion of a link between academic attainment and the expectations of students: the government's widening participation policies may have an impact on the expectations of students who have accessed higher education from a non-traditional route.</p>	<p>Adcroft <i>et al.</i> (2010)</p> <p>Biffi &amp; Issac (2002)</p> <p>Clewes (2003)</p> <p>UK government, Department of Business, Innovation and Skills (2011)</p> <p>Marzo-Navarro <i>et al.</i> (2005)</p> <p>Munteanu <i>et al.</i> (2010)</p> <p>Oldfield &amp; Baron (2000)</p> <p>Rolfe (2001)</p>
	University Faculty	<p>The introduction of tuition fees has led to a change in perception by academics of how they are able to perform in their role. The managerialist practices that have accompanied increased tuition fees have been met with a varied reaction from academics, such as aggressive strategies to distance themselves from the demands of a changed organisational strategy and culture. This has led to some academics undertaking the practice of using their discretion to distort those university policies and objectives they do not believe in.</p>	<p>Bryson (2004)</p> <p>Dearlove (2002)</p> <p>Häyrinen-Alestalo <i>et al.</i> (2006)</p> <p>Kosaker &amp; Lee-Kelly (2007)</p> <p>Newton (2002)</p> <p>Tipples <i>et al.</i> (2007)</p>

	University Management	<p>The change in university funding and an increase in the size of the higher education system have meant that universities have moved away from Baldrige's 'collegiums' of the 1970s. Universities are now organised around managerialist principles. Accompanying this practice of managerialism is the introduction of private sector principles and practices. This has resulted in organisational changes being made, including the introduction of the academic manager and the application of mainstream business techniques such as marketing.</p> <p>Alongside organisational changes are additional requirements by government policies such as widening participation and the employability agenda, which can influence the strategy of a university as well as its external audit requirements and benchmarking.</p>	<p>Baldrige (1971)</p> <p>By <i>et al.</i> (2008)</p> <p>Binsardi &amp; Ekwulugo (2003)</p> <p>Dearlove (2002)</p> <p>Hellström (2004)</p> <p>Kolsaker (2008)</p> <p>Lapworth (2004)</p> <p>Kolsaker (2008)</p> <p>Strehl <i>et al.</i> (2007)</p>
<b>Secondary</b>	Other Higher Education Institutions	<p>Despite the formal abolition in 1992 of the binary system of the British higher education, under which two parallel systems (universities and polytechnics) operated, the segmentation of the old system remains. Some commentators note that whilst all degrees are deemed to be equal in terms of quality, in the view of students, parents and employers degrees are ranked on the basis of subject discipline and the awarding institution. Universities forming their niche and the clustering of like-minded universities such as the Russell Group and the 1994 Group further exacerbate this segmentation of the British higher education system by creating so-called 'elite' universities. These elite universities are able to offer positional goods that allow students, regardless of their background, to secure social status and the capacity to earn a higher income by virtue of having a degree from one of these universities.</p> <p>The interdependent nature of the higher education market in Britain has been likened to 'cream-skimming and dreg-siphoning', that is high- and middle-ranked universities recruit students with a</p>	<p>Coates &amp; Adnett (2003)</p> <p>Marginson (2004)</p> <p>Clotfelter (1999)</p> <p>McCaig (2009)</p> <p>Winston (1999)</p>

		<p>slightly lower academic attainment than their usual intake in order to gain additional income. Consequently, the lower-ranked universities find that their most academically able applicants are being 'cream-skimmed' by higher-ranked universities. In order to recruit sufficient numbers of students to make their business model work, these lower-ranked universities then have to recruit students with a lower academic attainment, hence 'dreg-siphoning'. The decisions and strategies of universities ranked at the top of respected league tables therefore impact on the entire British university system.</p> <p>As well as competing for students, universities compete with each other for faculty staff members.</p>	
	The Economy – Global & UK	The changes in funding for higher education in England from 2012 onwards are a consequence of the fiscal deficit the UK is current facing following the worst global economic slowdown since the great depression of the 1930s.	UK government, Department of Business, Innovation and Skills (2011)
	Government – Funding & Policy	<p>The UK government's policy on the funding of higher education is the withdrawal of public funding and the shifting of the burden of cost from the taxpayer to the student, who, the government argue, will ultimately benefit from higher education.</p> <p>However, the government face a 'trilema' between their objectives of widening the participation of students who would not normally access university, increasing the overall participation of young people studying at university, and moving the financing of higher education to students and/or their families.</p>	<p>Adnett &amp; Tlupova (2008)</p> <p>Blankenau <i>et al.</i> (2006)</p> <p>Biffi &amp; Issac (2002)</p> <p>Fernandez &amp; Rogerson (1995)</p> <p>Gradstein &amp; Justman (1995)</p> <p>Tight (1998)</p> <p>Viaene &amp; Zilcha (2011)</p>

		On the point regarding increasing participation, some commentators question whether it is achievable or indeed desirable to increase participation. However, for others there is a positive relationship between the investment in higher education and long-term economic growth.	
<b>Tertiary</b>	Society	For society as a whole, universities are seen as conduits of social mobility, 'escalators' with a greater impact for female social mobility than male. Whilst a university education can provide opportunities for those with good academic attainment and an aspiration to succeed, policies such as widening participation and access agendas act as conduits to achieve intergenerational mobility.	Blanden & Machin (2004) Breen & Jonsson (2005) Goldthorpe (2002) Haveman & Smeeding (2006) Hossler <i>et al.</i> (1989)
	Employers	Employers make demands on universities to educate graduates with vocationally desirable skills. This influence has been given increased credence following the government's introduction of additional reporting requirements for universities to publish statistics concerning the subjects studied by graduates and their corresponding employment level six months post-graduation.	Bolden & Petrov (2008) Gleeson & Keep (2004) UK government, Department of Business, Innovation and Skills (2011)

Table 1 illustrates the timeline of the key findings summarised in Figure 1 against the tuition fee situation at the time. It can be seen that some of the literature reviewed pre-dated the introduction of tuition fees in England. This is due to the large body of literature originating in the US, where tuition fees have been part of the higher education landscape for a greater numbers of years than England or the UK. Nonetheless, it can be seen that the majority of the references in the key findings were published between 2002 and 2008. This time period came four years after the first introduction of tuition fees in the English higher education system in 1998, and straddles the introduction of the variable tuition fee and associated student loans in 2006.

**Figure 2: Timeline of Key Literature Reviewed and the Tuition Fee Situation in England at the Time**

UK Fee Situation	Year	Literature
No tuition fees and means-tested maintenance grants	1995	Fernandez & Rogerson (1995) Gradstein & Justman (1995)
	1996	
	1997	Leslie & Brinkman (1987) Heller (1997)
Up to £1,000 per year tuition fees depending on family income	1998	Tight (1998)
Abolition of maintenance grant and increase in student loans	1999	Clotfelter (1999) Winston (1999)
	2000	Oldfield & Baron (2000)
	2001	Rolfe (2001)
	2002	Biffi & Issac (2002) Carneiro & Heckman (2002) Dearlove (2002) Goldthorpe & Jackson (2008)
	2003	Winefield <i>et al.</i> (2003) Coates & Adnett (2003) Clewes (2003) Binsardi & Ekwulugo (2003)
	2004	Blanden & Machin (2004) Bryson (2004) Gleeson & Keep (2004)

		Hellström (2004)
		Lapworth (2004)
		Marginson (2004)
		Newton (2002)
Introduction of variable fees of up to £3,000 per year.	2005	Breen & Jonsson (2005) Marzo-Navarro <i>et al.</i> (2005)
	2006	Haveman & Smeeding (2006) Häyriinen-Alestalo & Peltola (2006)
Increase in student loans and reintroduction of a capped maintenance grant for the poorest students		
	2007	Blankenau <i>et al.</i> (2006) Strehl <i>et al.</i> (2007)
	2008	Adnett & Tlupova (2008) Bolden & Petrov (2008) By <i>et al.</i> (2008) Kolsaker (2008) Neill (2004) Tipples <i>et al.</i> (2007)
	2009	
	2010	Adcroft <i>et al.</i> (2010) Chapleo (2010)
Proposal that from 2012:- Fees of up to £9,000 per year	2011	McCaig (2009) Viaene & Zilcha (2011)
Increase in loans to be repaid subject to income. Scholarships available for the poorest students.		



The literature review using a stakeholder analysis provided the conceptual framework to take forward to Document Three.

**Document Three: An investigation into the perceived service expectations of students in advance of the impending change of university tuition fees: a multi-stakeholder approach**

This was a piece of qualitative research using NTU as a case study, which used a multi-stakeholder approach including current students, academic staff both internal and external to NTU, and a member of NTU's Senior Management Team. This approach was taken in order to understand how others perceived the service expectations of students immediately prior to the introduction of higher fees in the 2012/13 academic year. The majority of the literature reviewing this subject concentrated on either students or academic staff views. None of the literature reviewed in Document Three and Document Two focused on the views of a group of different stakeholders within a university. It is clear from the literature review that academic staff, university management and the university's organisational strategy and structure all influence the experience of students. Thus, alongside the research aim of Document Three to understand the perceived service expectations of students prior to the introduction of higher fees, it also had an objective to make a contribution towards closing a gap in current research.

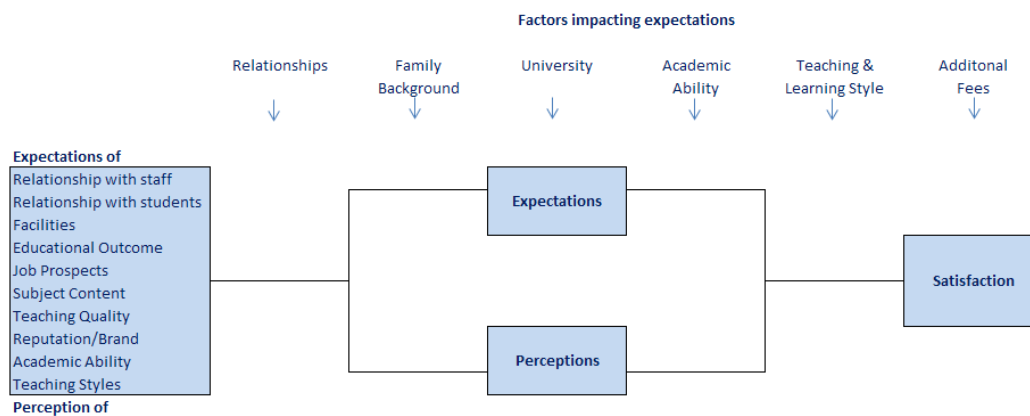
This document:

- Evaluated the expectations of students.
- Evaluated the perceptions of student expectations held by key stakeholders.
- Compared and commented upon the differences between different stakeholder perspectives of student expectations and upon the expectations of students themselves.

*The Conceptual Model and Literature Review*

The conceptual model used in this document was based on Parasuraman *et al.*'s (1985) work, which suggested that customer satisfaction is the difference between the service expectations of the customer and their perception of the service they have received (Figure 3). The literature regarding the notion of the student as a consumer and the decision-making process of students as they apply to universities, suggests that students have certain expectations of university both prior to applying and following enrolment. But whether these expectations are understood by those who are running or

working in universities is a moot point, hence the reason for undertaking this particular piece of research.



**Figure 3: Conceptual Model Developed and Used in Document Three**  
(Adapted from Parasuraman *et al.*, 1985)

Although Parasuraman *et al.*'s (1985) work included both the expectations of service and the perceptions of the service received by consumers, the perception of the student was not evaluated in the conceptual model in Document Three. The consideration of student expectations is germane to Document Three, as these expectations are subject to a number of influences including: relationships with others, familial background, the university itself, the academic attainment of the student, the teaching and learning style, and more pertinently, the payment of additional tuition fees. It was this framework against which the data generated from the interviews and focus groups of the different stakeholders were interpreted against, as illustrated in Figure 3.

### *Methodological Considerations*

Given that the aim of Document Three was to provide an understanding of the demands and expectations of students, the research was undertaken with a realist approach, as this allowed me to take into account both the social and physical context of the actors in the research and their causal effect on their own perspectives (Maxwell & Mittapalli, 2007). The accompanying ontological assumption was subjectivist, as it acknowledges that social entities are not only the creations of people, but also of their perceptions and their actions (Mac Rory & Byrne, 2011). Since a university is more than an entity or physical estate (students, the faculty and administrators/management

collectively form a university), and because organisational culture can be studied through the accounts of the people who belong to that organisation, subjectivity was appropriate.

### *Research Methods and Data*

The research method used was qualitative, which involved collecting data from one group of second-year undergraduate students and four academic staff through focus groups with the students and a total of five semi-structured interviews with staff: two members of NTU's academic staff, one academic at a university external to NTU, an academic member of the NTU Senior Management Team and an NTU Head of Marketing. These interviewed staff members were targeted for their involvement with undergraduate students and their length of career with regard to having had involvement with undergraduate students before tuition fees were introduced in 1998 and during the subsequent increase in fees in 2006. Initially, the plan was to only interview academic staff; however, it was suggested that it would be interesting to interview a colleague who heads a marketing function within NTU, in order to understand her perspective of student demands and expectations.

Following the focus group and interviews, the data collected was transcribed and coded against an a priori set of codes (Figure 3) and an in vivo set of codes, which emerged through the coding process and were used alongside the a priori set of codes. These emergent categories were aligned with the themes suggested by the theoretical framework.

### *Findings and Further Research*

The student expectations and the stakeholders' perception of student expectations were, for the most, aligned. However, there were some differences:

- Despite the large investment NTU has made in its estate and infrastructure, the University's physical estate and infrastructure did not have a significant influence over the expectations of students or what the stakeholders perceived the student expectations to be.
- The marketing efforts by NTU to attract new students did not fit with the sensitivities of the existing students. There was a feeling by the existing students that NTU did not value them as much as potential students.

- The quality of contact with academic staff is one of the key components of student expectations. Students expect to be able to access staff and for them to be approachable and available.
- The ultimate expectation of students is to gain a 2.1 class of degree or better and to get a good job post-graduation.

Some of the findings in Document Three have implications for NTU's strategy, notably around the 'neutral perceptions' of an improved estate and the negative connotations by existing students of the University's marketing to prospective students. Other implications of the findings are that despite the University having actively intervened with the introduction of an increased level of rigour when marking examinations (with the result that a greater number of students graduate with a 2.1 or first-class degree), it is still necessary for students to invest time and effort in their studies to achieve this educational outcome on a merit basis; thus, the University can only have a limited influence over the expectation of a student to gain a 2.1 degree or better. Likewise, obtaining a good job post-graduation depends to a large extent upon the students themselves and the prevailing economic climate, rather than upon any deliberate action of the University itself.

The findings of Document Three regarding student expectations alongside the related literature in the field of student expectation informed the trajectory of the subsequent research. The literature concerning student expectations suggested that different students, depending on their academic attainment and socio-economic group, have different expectations of university. The rhetoric that surrounded the change to higher education funding in England suggested that certain groups of students would be excluded from having a university education; thus, if there was a change in the type of student who enrolled at NTU, there might also be a change in student expectations.

**Document Four: A quantitative investigation to assess whether the changes in funding introduced in September 2012 had affected the nature of the student population and the choices they made**

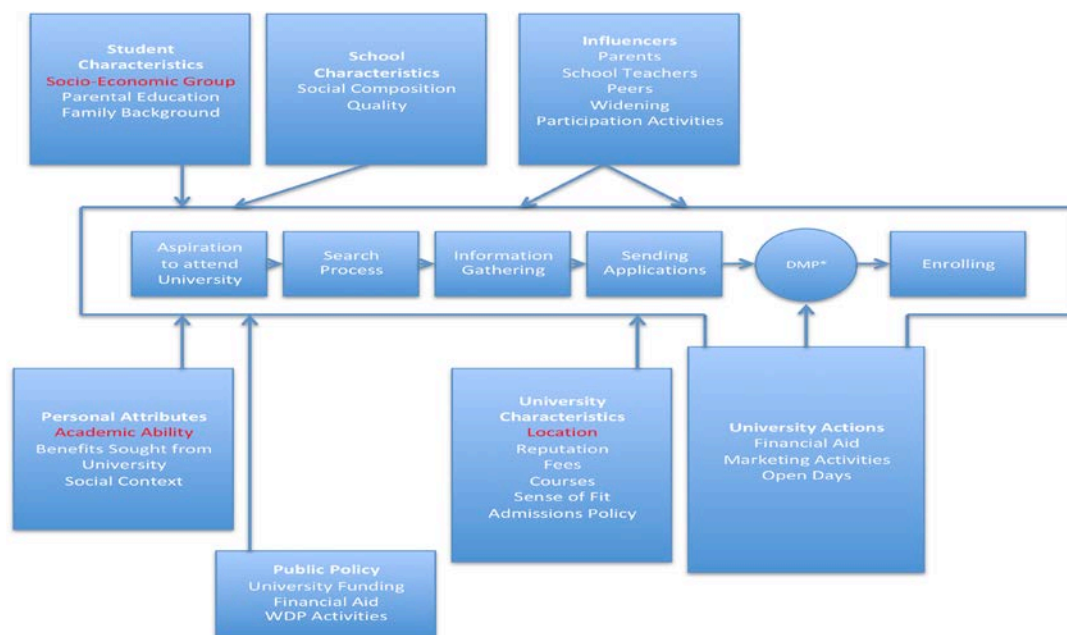
The next step in this DBA research journey was to examine whether there had been a change to the student population accessing university following the introduction of higher fees in 2012/13. As noted previously, many commentators at the time of the publication of the Browne Review in October 2010 and the subsequent 2010 Amendment to the Higher Education Act 2004 cautioned that students from lower socio-economic backgrounds would be deterred from going to university. At the time of writing Document Four (October 2012), new first-year students had started their university careers paying

the higher rate of fees of up to £9,000 per year. Personal previous experience, in my role at NTU, of increased tuition fees in 2006/07 has shown that there is a change to the type of student that NTU can recruit in terms of academic attainment. This experience of a change in the nature of the student population suggests that for those students who enter university with a lower academic attainment, there are challenges that need to be overcome in order for them to progress through their university education to graduation. Additionally, in some subject disciplines, NTU recruits on a local and regional geographical area. This may impact the different support systems which are in place to support those students who follow the more traditional route of studying away from home but also have to a potential to disrupt some aspects of NTU's business model, such as the revenues generated from the student residences, should these students remain in the family home.

Document Three concerned the perceived understanding of service expectations of students prior to the introduction of higher fees in the 2012/13 academic year. Document Four, however, sought to examine whether the higher fees changed the nature of the student population and/or the choices students made in the 2012/13 academic year, again using NTU as a case study. Any significant change to the demographic of the students enrolling at NTU might mean a change in the expectations of students. Alongside any change in student expectations as a result of a different type of student enrolling at NTU, there might be other implications such as changes in the academic support required by students, the university infrastructure, the timetabling of lectures, and ancillary services such as halls of residences and catering outlets.

#### *The Conceptual Model and Literature Review*

The conceptual framework that was used in Document Four was a model adopted from Vrontis *et al.*'s (2007) 'Contemporary higher education student-choice model for developed countries' (Figure 4). This shows the key facets of interest for potential students as they make choices about higher education. These facets have an impact on potential students all the way from their initial aspiration to attend university through to their enrolment.



\* Decision-making Point

**Figure 4: Conceptual Model Developed and used in Document Four**  
(Adopted from Vrontis *et al.*, 2007)

The model in its entirety was useful as an overview of the many interrelated influences of student choice, and it functioned as a roadmap against which to guide the research and gather student data from the University's records for interpretation. The influences highlighted in red were used to answer the research questions.

The conceptual model, supported by the literature, suggests that the decision to attend university is multi-faceted. However, most of the literature reviewed for this document concentrated only on individual elements such as the participation of socio-economic groups from non-traditional backgrounds and subject choice. Whilst some of the literature discussed how tuition fees might influence the participation of certain socio-economic groups, it tended to concentrate on those students from lower-income backgrounds rather than have a holistic approach. Likewise, there has been some limited work on how students react to the increasing costs of higher education through mitigating actions such as staying at home to study, yet this is mostly done in the context of lower socio-economic groups rather than across the entire student population.

Document Four sought to answer the following questions:

- 1) Has there been any change to the average tariff on entry following the increase in tuition fees?
- 2) Has there been any change to the demographic of student, according to postcode, following the increase in tuition fees?
- 3) Has there been any change to the distance that students will travel from their home to NTU following the increase in tuition fees?
- 4) Has there been any change to the subjects that students study following the increase in tuition fees?

### *Methodological Considerations*

For Document Four it was hoped that a positivist stance could be taken, as this was a more natural epistemological stance. However, when discussing the questions that Document Four was seeking to answer, notably around the change in distance that students choose to travel to study away from home, it became clear that there was a high level of subjectivism; therefore, taking an entirely positivist approach might have been foolhardy. Instead, the work undertaken was from a realist standpoint. This stance allowed the goals of positivism to be maintained yet acknowledged that research could have subjective elements (Fisher, 2004:20). According to the literature review in Document Four regarding student choice, the social and physical context of prospective students has a huge influence over the decisions they make with regard to university. As such, a realist stance lent itself to the research being undertaken. Aligned to the epistemological stance and given that the research aim was to find out how students and universities have changed their behaviours following the increase in tuition fees, an objective ontological stance was assumed in order to achieve this aim and to understand any potential future patterns that could inform policy.

### *Research Methods and Data*

The research method used was a quantitative investigation using secondary data that was available through the author's role at NTU. The data to be mined belonged to NTU's Banner system, which holds definitive records of students from enrolment through to graduation. The information held in the Banner system comes from a number of sources, including students themselves, who are required to submit certain details such as their date of birth and address. Other information, such as the course on which they are enrolled and their academic attainment upon entry, comes from NTU's customer

relationship management system (CRM). Data relating to examination results, choice of modules and fees payable are input by various different administrative functions across the University. The importance of the data contained in the Banner system is such that it is used as the definitive record for a number of different functions across the University, including the regulatory returns to the government's Higher Education Statistics Agency (HESA).

The research data extracted from NTU's Banner system consisted of anonymous student data from the 2008/09 academic year to the 2012/13 academic year (a period of five years) for all eligible English-domiciled full-time students entering their first year of university. The data comprised:

- Year of entry
- Academic school
- Course of study
- Number of A-level points achieved (tariff points)
- 

In order to answer some of the research questions on socio-economic status, further data was utilised: CodePoint data from the Ordnance Survey (OS), and the English Index of Multiple Deprivation (IMD) from the Office for National Statistics (ONS). The English IMD data set provides a score for each local authority ward, indicating a measure of deprivation. The IMD uses an ascending scale, with 'Quartile 1' identifying the most deprived areas. By using the CodePoint data set, which provides local authority ward data according to postcode, the student's home postcode was matched against the relevant local authority ward, and a resultant IMD score was allocated to each student.

### *Findings and Directions for Further Research*

Despite the sizable change in tuition fees, there was not a large resultant change in the student population, or in the choices those students made. The findings suggest that:

- There has been no marked change in the distance of students' travel between their home and the campus of study since the increase in tuition fees for any socio-economic group.
- There appears to be a linear relationship between the academic tariff on entry and the distance between the students' home and the campus of study.



- From the data analysed in this document, there is no evidence to suggest that students from the most deprived backgrounds are staying closer to home in order to undertake their studies.
- It would appear that course subjects tend to recruit students on either a local, regional or national basis at NTU. Following the increase in fees in the 2012/13 academic year, this geographical pattern of recruitment has shown no marked change.
- In the 2012/13 academic year there was a slight change in enrolment according to subject group. However, all of the changes were only 1.6 per cent more or less than the previous year, and as such perhaps do not provide much in the way of insight with regard to the influence of higher fees over subject choice. Of note is that interventions may have been taken by NTU to manage the demand of subject choice according to the resources available in the institution.
- Despite the limited value of examining the change of enrolment according to subject between the 2012/13 and 2011/12 academic years, an analysis shows that in 2012/13 some long-term trends of enrolments by subjects were reversed. Although none of these noted changes could be considered substantial (all were less than 5 per cent), they could still be significant.
- Aligning subject choice to socio-economic background shows that students from less affluent backgrounds are more likely to enrol on a science-based subject than their more affluent counterparts.
- In the 2012/13 academic year the average tariff on entry to NTU was in excess of the average required tariff demanded by the University. The data suggests that this was an unusual occurrence in this year, as previously the average tariff on entry to NTU by students had been less than the average required tariff demanded by the University. This may be due to university policy at clearing not to reduce the tariff points on entry, either because of capped student numbers, or so that NTU could publish a higher average entry tariff in the Key Information Statistics (KIS) data and other ranking tables.
- In terms of the academic credentials of students according to their economic demographic, all groups of students had increased their average tariff points to gain a place to study at NTU. Whilst this may be due to actions taken by NTU itself in terms of entry point requirements, there is nevertheless a clear difference between the level of deprivation of the students and their academic credentials. Whilst this gap is narrowing for the more academically able, there

is a widening difference for those students who are less academically able. This may be a consequence of widening participation activities.

- There has always been less participation of students from Quartile 2 on the IMD scale than those from Quartile 1. This may be due to this group of students being too affluent to access the financial aid that poorer students from Quartile 1 can benefit from, yet not being wealthy enough to receive financial assistance from their families. Another cause may be other government initiatives such as apprenticeship schemes, which offer these students an alternative to higher education.
- Despite a slight increase in the participation of students from less affluent backgrounds in the 2012/13 academic year, students from Quartiles 1 and 2 still do not have the same level of participation as their more affluent counterparts in Quartiles 3 and 4.

Document Four appears to suggest that there has been no marked change to the student population either in terms of demographics or choices made. These findings, however, perhaps cannot be considered to form a robust case, because although they provide a useful illustration of the NTU student population following the increase in tuition fees, the data only covers the first year of fee changes; furthermore, the data focuses on enrolments only, meaning that only part of the potential student population is addressed. From a personal point of view, this document provided the opportunity to undertake an analysis of a large data set and to understand some statistical analysis techniques. The preparation of the large data set and the incorporation of ancillary data such as CodePoint and IMD provided a foundation upon which to build this thesis, Document Five.

In terms of moving forward it was intended that this thesis would build upon the findings of Document Four by both expanding and extending the research scope. In order for the thesis to be of greater value, the research undertaken in Document Four would be repeated using a wider longitudinal range of data that includes enrolment data for the 2013/14 academic year (the second year of increased tuition fees). Additionally, whilst enrolment data is useful for a number of facets of examining the impact of increased fees, the inclusion of application data over the same period of time would also improve the findings and enrich the data. However, the initial step in expanding the findings was to undertake a more focused review of the literature available, and to also include recently published findings. This critical literature review is contained in the following chapter.

### Chapter 3: Literature Review and Research Hypotheses

In Documents Three and Four the research was undertaken from a realist standpoint, despite the natural epistemological stance being inclined towards that of a positivist. However, as discussed earlier, by using a realist stance in Documents Three and Four, the goals of positivism were maintained whilst also acknowledging that research could have subjective elements (Fisher, 2004:20). The realist approach takes into account both the social and physical context of the actors in the research and their causal effect on their own perspectives (Maxwell & Mitternacht, 2007). The literature reviewed in Documents Three and Four suggested that the social and physical context of prospective students has a huge influence over the decisions they make with regard to university. Furthermore, Document Three and most notably Document Four served as exploratory research into this field, whereby having some level of subjectivity afforded the opportunity to explore without constraints.

The aim of this document is to investigate the nature of the student population and the choices students made following the introduction of higher tuition fees. The nature of the student population is subject very much to the choices that students make as part of the wider decision-making process of going to university. As such, this chapter seeks to provide an overview of the literature on the student decision-making process. However, there is a point of departure from the literature reviews in the previous three documents in that this review will also be used as a tool to establish hypotheses by discovering associations in the current literature. This approach of analysing the relevant literature in order to generate plausible hypotheses to test lends itself to the positivist stance. Nonetheless, despite there being a departure from using the literature to develop a conceptual model to guide research, a commonality with the previous research remains in that the conceptual domain of this literature review has been informed by the conceptual models developed in Documents Two to Four. Following on from this, the literature on the student decision-making process was reviewed from a number of perspectives, as follows:

- **The socio-economic composition of the student population.** The primary focus is on the composition of the student population with reference to the impact that university tuition fees have on the decision-making process (in terms of choosing to go to university) by students from lower socio-economic groups. However, the review also draws on literature that is relevant to the study of the socio-economic composition of the student population; this includes examining some non-financial influences over the student decision-making process that are linked to the socio-economic demographic of the student, such as parental support, cultural norms and academic attainment.

- **Subject choice.** Perhaps secondary to the decision to go to university is the choice of which subject to study. The focus in this section of the literature review is identifying any likely relationship between increased tuition fees and the choice of subject studied at university.
- **University location.** This section is a discussion of the literature concerning how tuition fees can influence other elements in the student decision-making process, such as the location of the university.
- **University reaction to increased fees.** Universities compete in an increasingly marketised environment, which extends beyond the country in which they are located. This section focuses specifically on the way that universities' actions in the face of increasing tuition fees have been conceptualised in the student decision-making process literature.

This framing of the literature leads to the development of specific research hypotheses, which will be tested to pursue the research aims of this thesis.

### **The socio-economic composition of the student population**

The socio-economic composition of the student population is an interesting issue. Under the Labour government administration of 1997–2010, it was a policy that 50 per cent of young people would enter higher education (Blanden & Machin, 2004), with the result that student places expanded to 2.5 million in 2012 (Milburn, 2012). Other initiatives such as the requirement for universities to undertake widening participation activities (Universities UK, 2003) and the creation of 'Aim Higher', an initiative to encourage children and young people from socio-economic backgrounds who would not normally go to university, to consider university early in their school career (HEFCE, 2011) were designed to encourage students from socio-economic backgrounds that did not traditionally go to university, to access higher education. The actual percentage of young people accessing higher education increased to 47 per cent by the 2009/10 academic year (Universities UK, 2012).

Whilst the Labour administration brought in the concept of enabling all students, regardless of their social or economic backgrounds, to access higher education, one of the fundamental aims of the Robbins Report of 1963 was to ensure that every person who was academically able to go to university was supported in doing so (Robbins, 1963).

Despite the fiscal policies designed and implemented by successive governments over the past half-century, and research that suggests that going to university plays a key role in improving social mobility (Sutton Trust, 2014) the literature suggests that going to university is still the domain of the middle classes (Reay, 1998; Reay *et al.*, 2001a; Evans, 2009; Mathers & Parry, 2009). This relationship between family wealth and a university education is a long-standing one (Chapman & Ryan, 2002), with the social class of students (represented by the occupations of their parents) being the greatest predictor of their educational trajectory (Harrison & Waller, 2010). Students' decisions regarding if and where they will undertake higher education cannot be separated from their socio-economic demographic or familial background (Payne, 2003; Chapman & Ryan, 2002).

On the face of it, university education should be a meritocracy, in line with the central message in the Robbins Report (Robbins, 1963) and subsequent fiscal initiatives and policies aimed at supporting students who have the academic attainment to go to university. The social benefits of university attendance for students from lower socio-economic groups are widely debated and interpreted, but students who typically go to university are the children of professional and managerial socio-economic groups (Hall, 2012).

Why are attendance at university and social class so inexorably linked? The most obvious reason is the cost of going to university; however, under the previous and current funding regimes students from less affluent homes have been able to access financial aid via bursaries and scholarships, which are offered alongside student loans. At a macro level, the demand for higher education is price-inelastic (Heller, 1997; Jacobs & Van Der Ploeg, 2006; Dearden *et al.*, 2011). This price-inelasticity of fees has been estimated at different levels: a 0.5–1.0 per cent decline in enrolment for every \$1,000 increase (Heller, 1997), a 4.4 per cent decline in enrolment for every £1,000 increase in fees (Dearden *et al.*, 2011), and a 5–10 per cent decline in enrolment if the tuition fee doubles (Jacobs & Van Der Ploeg, 2006). However, when examined at the individual level, there are significant differences in price-elasticity, with students from less affluent homes being the worst affected (Kodde, 1985; Paulsen & St John, 2002; Epple *et al.*, 2006). Some commentators have suggested that whilst an increase in fees may reduce the 'attractiveness' of going to university, evidence from New Zealand and Australia suggests that enrolment to higher education following an increase in fees is not adversely effected (Blöndal *et al.*, 2002).

So what impact does rising tuition fees have on the decisions of prospective students regarding higher education? According to Vossensteyn and Canton (2001:55), 'Tuition Fees are expected to have a

negative influence on the decision to attend higher education', a view echoed by the Sutton Trust (2010). However, it is hard to assess the impact of tuition fees on this decision to go to university, as there are other variables influencing the decision that are less 'malleable' than finance, such as attitudes (Vossensteyn & Canton, 2001:55). It has also been suggested that the impact of increasing tuition fees on enrolments can vary across universities depending on the fee level set, the characteristics of both current and potential students, the financial aid available, and higher education competitors (Leslie & Brinkman, 1987). There is some consensus that there is a greater impact on students from lower socio-economic backgrounds than on more affluent students, even with the availability of financial aid (Leslie & Brinkman, 1987; Heller, 1997; Vossensteyn & Canton, 2001; Dunnnett *et al.*, 2012).

Other commentators have suggested that the availability of financial aid via subsidies, bursaries and means-tested bursaries has meant that students from less affluent backgrounds are able to mitigate the cost of higher education (Heller, 1997; Leslie & Brinkman, 1997; Paulsen & St John, 2002; Dearden *et al.*, 2004; Neill, 2004; OFFA, 2014). However, some observers note that financial aid influences only those students whose decision to go to university is uncertain (Neill, 2004), and that frequently students do not know at the point of application how much financial aid they will be able to access (Leslie & Brinkman, 1997; Davies *et al.* 2008). Regardless of the range and availability of financial aid, however, students from more affluent backgrounds often have access to a source of funding that students from lower socio-economic groups do not; that is, the financial goodwill of their parents (Carneiro & Heckman, 2002).

Consideration is therefore needed for the social and cultural environment of prospective students (Hemsley-Brown, 1999), Gorard *et al.* (2007) note that this consideration should be extended further to include the students' school and peer group. Students from lower socio-economic groups have differing support mechanisms, norms, behaviours and expectations to students from higher socio-economic backgrounds (Mathers & Parry, 2009). These students from more affluent socio-economic groups approach the whole decision-making process with certainty and with parental support and guidance (Reay, 1998). Despite there being little agreement over the importance of different influences on a student's decision to go to university, the literature suggests that parents and the socio-economic group to which they belong are two of the primary factors (Szekeres, 2010).

The families of prospective students are an important influence over whether they will decide to go to university (Reay, 1998; Evans, 2009; Mathers & Parry, 2009). The decision around choosing a

university is an example of how a family makes a decision with regard to what can be considered a 'major purchase' (Litten, 1982). It is the familial (and institutional) 'habitus' of potential students that provides them with a support mechanism as they make the decision as to whether to go to university (Reay, 1998; Mathers & Parry, 2009). So pivotal is the parental support of prospective students that it acts as a major influence over their higher education plans (Hossler & Stage, 1992; Moogan & Baron, 2003).

Whilst encouragement (or otherwise) from parents is one of the main sources of influence over potential students, information from friends is another, more indirect influence (Moogan *et al.*, 1999; Reay, 1998). Teachers (Heller, 1997; McDonough, 1997; Perna & Titus, 2005) and career guidance professionals (Moogan & Baron, 2003) also have influence over whether students will continue their studies in higher education.

There is consensus in the literature that having at least one parent who has experience of higher education makes students more likely to have a predisposition to continue to higher education themselves rather than leave school at the age of 18 (Litten, 1982; Hossler & Stage, 1992; Leslie & Brinkman, 1997; Reay, 1998; Reay *et al.*, 2001b; Moogan & Baron, 2003; Dunnett *et al.*, 2012). There is acknowledgement that potential students from non-traditional backgrounds do not have familial or parental experience of higher education (Tierney & Venegas, 2009).

Going to university may not be considered a cultural norm for students from less affluent backgrounds predominately two reasons; Firstly, the environment in which these students grow and go to school do not necessarily provide a suitable conduit for university (Carneiro & Heckman, 2002; Coelli, 2004). These potential students either do not feel a 'sense of entitlement' to go to university (Evans, 2009) or may have social anxiety about going to university (Harrison & Hatt, 2012); or Higher Education is not considered an appropriate life choice (Gorard *et al.* 2007); middle-class students appear more confident in a university environment than students from lower socio-economic backgrounds (Evans, 2009; Mathers & Parry, 2009; Reay *et al.*, 2001b; Reay, 1998). Students from lower socio-economic groups can lack the 'cultural and social capital' to access university (Tierney & Venegas, 2009), attributes that middle-class students have due to the advantage of their parents' attendance at university (Hall, 2012).

Secondly, there may be a general lack of aspiration to go to university (LaRocque, 2003) or an anticipation of barriers (financial or otherwise), with the result that these students are not making the

effort at school to achieve the required academic attainment (Galindo-Rueda *et al.*, 2004; Tierney & Venegas 2009). The link between socio-economic status and academic attainment is important. There are a number of papers that suggest there is a clear relationship between social class and educational attainment at school (Blanden & Machin, 2004; Cameron & Heckman, 2001; Reay, 2006 Machin & Vignoles, 2004; Blanden *et al.*, 2007), and this inequality in educational outcomes influences both whether students will go to university and which university they will study at (Bladen & Gregg, 2004; Machin & Vignoles, 2004). As a result, students 'self-select' universities based on their perceptions of the ease of achieving the required academic qualifications (Szekeres, 2010; Leslie & Brinkman, 1987; Des Jardins *et al.*, 2006). Haywood & Molesworth (2010) state that university marketing messages may play on the tendency of students to self-select by suggesting that courses are easier. Many students will not apply to elite universities because they feel that they will not be able achieve the academic requirements (Jones & Thomas, 2005). This self-selection coupled with increasing tuition fees may deter students from lower socio-economic groups with poorer academic attainment from continuing their studies in higher education (Dwenger *et al.*, 2012).

The choice of which university to study at is very distinctly different depending on the social class of the student (Reay *et al.*, 2001a). The student's perception of where lower socio-economic groups will end up may also be a factor that explains why students from lower-income backgrounds do not continue to higher education. For those working-class students who do go to university, and despite there being a unified HE system (Gallacher & Raffe, 2012) there is a tendency for working class students to attend post-92 universities (Croxford & Raffe, 2013; Croxford & Raffe, 2014) or universities that are considered to be 'second class' by both themselves and others (Reay *et al.*, 2009; Robertson, 2010).

Tierney & Venegas (2009) provide a narrative on how parents from higher socio-economic groups act in a certain manner due to them being sufficiently affluent to be able to provide quality schooling for their children. It is within these educational settings that children become accustomed to a culture of studying hard in order to achieve a place at a good university. As a result of attending a top university, these same children are able to secure good jobs with high incomes, which in turn enable them to send their own children to good schools, and thus the pattern repeats itself. Similarly, working-class students perceive higher education to be a risky and costly choice (Sanders & Hardy, 2013), which may lead them to form the view that going to university is a 'poor investment' due to the relationship between social class, choice of university, career opportunities and resultant salaries (Robertson,



2010). It is these students from low socio-economic groups who do not have the 'cultural or social capital' to understand how to break this cycle of poverty (Tierney & Venegas, 2009).

Participation at university is decided before the point of application, and a number of studies identify earlier inequalities within the education system, which means that students from less affluent backgrounds do not meet the required academic standard to access higher education (Galindo-Rueda *et al.*, 2004; Carneiro & Heckman, 2002; Anders, 2012). Other studies indicate that the decision to enter higher education is made prior to the students entering sixth form at the age of 16 (Hossler & Stage, 1992; Moogan *et al.*, 1999; Connor *et al.*, 1999). Students who have made the decision to study at university early usually have high expectations of their exam results, regardless of their socio-economic background (Connor *et al.*, 1999; Moogan & Baron, 2003). This link between expected examination results and plans to participate in higher education is further strengthened by the observation that students make post-secondary education plans at the age of 16 when they enter the sixth form (or ninth grade in the US) in advance of knowing what financial aid will be available to them (Hossler & Stage, 1992). Whilst the decision to go to university is made prior to entering the sixth form, most students decide on the subject discipline and specific university during their lower sixth year when they turn 17 (Moogan *et al.*, 1999; Payne, 2003).

Consequently, students from less affluent backgrounds perceive the increased tuition fees as an obstacle to accessing higher education, and therefore:

*Hypothesis 1: In the light of increased tuition fees, there will be fewer students from more deprived backgrounds (those students classified in IMD Quartiles 1 and 2) attending university.*

### **Subject choice**

The choice of university is significant, as the decision as to which university a student graduates from is 'carried forward like an indelible brand' (Dunnett *et al.*, 2012). In addition, the choice of subject studied at university can have similarly far-reaching effects on a student's life in terms of future employment prospects (Marini & Fan, 1997), political leanings (Nilsson & Ekehammer, 1986) and standard of living (Van de Werfhorst & Kraaykamp, 2001).

A number of studies suggest that subject choice is influenced by an interest in or an affinity with the subject (Harvey-Beavis & Elsworth, 1998; James *et al.*, 1999; Soutar & Turner, 2002; Szekeres, 2010). Other studies show that although the choice of course is not entirely determined by financial reasons (Vossensteyn & Canton, 2001; Callender & Jackson, 2008), the motivations surrounding course choice can be due to a student's desire to be suitably qualified for employment on graduation (Szekeres, 2010). Students may also focus on future earnings specifically to offset the cost of going to university (Hossler & Stage, 1992; Arcidiacono *et al.*, 2012), and on career prospects in the longer term (Kallio, 1995; Soutar & Turner, 2002); both of these considerations may therefore also act as determinants in the student's choice of subject.

Not all subjects are created equal, with early career outcomes varying depending on both the course and university (HESA, 2014), with graduates from medicine and dentistry courses earning the highest starting salaries and those studying creative arts and design the least. Certain subjects such as Economics, Law and Management traditionally have high rates of post-graduation financial return for men, and all subjects have high rates of financial return post-graduation for women. However, increasing tuition fees may have had a limited impact on these rates of return (Walker & Zhu, 2011): the increased fees of £9,000 meant a 1–3 per cent lower return on subjects that had had a poor rate of return prior to the increase. Fundamentally, it is the class of degree that has the greatest impact on the rate of return (Walker & Zhu, 2011).

Similar to the decision as to whether to attend university, subject choice is very much linked to the socio-economic group to which the student belongs, and also to parental involvement. Therefore, subject choice needs to be understood in the context of the social and economic environment from which the student comes. It has been suggested that there is an alignment between the subject choice of a student and the social and economic position of their parents (Davies & Guppy, 1997; Hansen, 1997; Van de Werfhorst *et al.*, 2003; Mocetti, 2008), with social position being determined by occupation rather than the typical class system of working, middle and upper (Weeden & Grusky, 2005). Young people have a tendency to use their parents' social position as a reference point against which to make decisions regarding their own future (Van de Werfhorst *et al.*, 2003), and often choose subjects at university that have an association with the class of their father (Van de Werfhorst & Luijkx, 2010).

For more affluent students who have parents who have played a very active part in their children's lives (what Coughlan (2008) terms 'helicopter parents'), there is a reliance on parents or other

significant adults in their lives, such as teachers, to make rational evaluations as to what is the most appropriate subject to study (Coughlan, 2008). With such parents being aware from their own experience how important it is for their children to enrol in particular subjects in order to further their own life chances, they influence the subject choice of their children (Van de Werfhorst & Luijkx, 2010).

This repeating pattern of behaviours by middle-class parents has fascinated commentators and provides an explanation regarding the choices made by young people from different socio-economic backgrounds. Lucas (2001) coined the term 'effectively maintained inequality' (EMI) to explain how students decide which subject to study at university. According to EMI, if a particular level or type of education becomes more accessible to the wider population, the middle-class family will seek to ensure that their children are ahead of that level, such as by encouraging their children to study more elite academic subjects or to continue with post-graduate education. Those students from less affluent backgrounds will lag behind their middle-class counterparts, and the educational inequalities will be sustained. According to Bourdieu's theory of cultural reproduction (Bourdieu, 1984) educational systems in industrialised nations function in such a way as to legitimise the inequalities between classes of society. In order to achieve success in the education system, students must possess 'cultural capital' and live within the higher-class habitus. Students from less affluent backgrounds do not generally possess these traits, and as such their failure within the educational system becomes inevitable. Hence there are large-scale inequalities in the education system. These differences in educational credentials help to both reproduce and legitimise social inequalities, as 'higher-class' individuals are perceived to be deserving of their place in the social structure. It is this cultural capital that allows the more affluent in society to gain access to university and maintain their social position.

Consequently, subject choice is correlated with socio-economic background, in terms of a 'sharp social divide' (Hemsley-Brown, 1999). Students of a higher socio-economic status are more likely to enrol on courses with high cultural value than students from lower socio-economic backgrounds, who tend to enrol on vocational courses that have high market value and that enhance their earning potential (Hemsley-Brown, 1999; Forsyth & Furlong, 2000, 2003; Chowdry *et al.*, 2010). Subjects that are more academic or scientific rather than vocational are more highly regarded (Lucas, 2001), with the result that the more affluent students do not wish to consider more vocational options when deciding on their course subject (Hemsley-Brown, 1999). Therefore, students are keen to 'alienate themselves' from one type of course in favour of another depending on their social background (Hemsley-Brown, 1999).

This 'sharp social divide' may have the consequence of less affluent students choosing courses for which they have little talent, but which offer an obvious career route at the end (Forsyth & Furlong, 2000). This short-term economic gain may come at the expense of the missed opportunity for these students to gain 'cultural capital' themselves (Forsyth & Furlong, 2003). Additionally, students from low socio-economic groups often perceive certain professions, such as medicine, as 'elite' and not something that they can aspire to, even if they have the required academic attainment (Mathers & Parry, 2009). Conversely, children of professional parents are more likely to aspire to study a subject such as medicine or law regardless of their academic attainment (Van de Werfhorst *et al.*, 2003).

Bratti (2006) suggests that the introduction of tuition fees and student loans has led to the polarisation of subject choice along social class lines. Through an examination of the British higher education system from 1981 to 1989 (when there were no tuition fees, and means-tested maintenance grants, rather than loans, were available to less affluent students), Bratti (2006) observed that subject choice was determined not by social class, but by other factors such as the quality of parenting and schooling.

Accordingly, in the light of the new pull factor of increased fees, it is expected that students will apply for subjects that offer an obvious career post-graduation. Therefore:

*Hypothesis 2a: In the light of increased tuition fees, there will be a change in the subjects that students apply to study at NTU: namely more students will apply for vocational courses.*

*Hypothesis 2b: Students from the most affluent backgrounds (those classified in IMD Quartile 4) will be more likely than their less affluent counterparts to enrol on academic subjects.*

## **University location**

Following the introduction of fees in 2012, it was widely predicted that students would be deterred from entering higher education (Paton, 2013; Radcliffe, 2013; Cook, 2012). Despite increases in tuition fees from 1998 onwards, the post-1960 increase in university attendance has continued to climb, with rates rising unabated from 5 per cent in 1960 to 47 per cent in 2010 (Crawford, 2012). Some commentators suggest that students from poorer backgrounds accessing university since 2006 have been financially better off than their predecessors who accessed university under zero or lower fee regimes, and as such there is no evidence to suggest that the introduction of higher fees in the 2006/07 academic year led to a decrease in participation in

rates (Chowdry *et al.*, 2010; Dearden *et al.*, 2008; Crawford & Dearden, 2010), and similar patterns have been observed in both Australia and New Zealand (Chapman & Ryan, 2002; LaRocque, 2003). Despite this, government statistics indicate that the number of students enrolling in English universities decreased by 12 per cent between 2011 and 2012; however, Bolton (2013) stresses that the number of entrants to universities in 2011 was far higher than normal, as many students who would otherwise have taken a year out (a gap year), instead moved straight from school to higher education in order to avoid paying the higher rate of fees the following year).

Are students mitigating costs through other actions? Some authors note that price-sensitive students seek to offset any increases in tuition fees by either enrolling at lower-priced universities (Leslie & Brinkman, 1987), enrolling at universities in a location with a low cost of living (Callender & Jackson, 2008; Crawford & Dearden, 2010), or enrolling at universities that are close to the family home in order to reduce the cost of travel, even if this means attending a 'lower quality' university and foregoing the opportunity to attend a more 'elite' university (Gibbons & Vignoles, 2012; Forsyth & Furlong, 2003; Crawford & Dearden, 2010).

Applying traditional economics to higher education, students who are price-sensitive would act as Leslie & Brinkman (1987) suggest, and enrol at a lower-priced university. However, within the English higher education system there are now no longer any 'lower-priced' universities. This is despite new government policy to revise the system of university funding in England, which came into effect in 2012. The Coalition government expected universities to set their tuition fees between £6,000 to £9,000 per year, with different institutions setting their fees at a level to reflect their perceived position in the higher education market, thus allowing students to make their choice of university, taking into account the price as well as other factors. However, in reality almost all English universities chose to set their tuition fees at the top end of the range (Hills & Richards, 2012; BBC, 2012, with the average tuition fee net of any waivers increasing from £8,123 in 2012/13 to an estimated £8,761 by 2015/16 (Bolton, 2014). It should be noted that although the formal binary system was abolished in 1992 (with former polytechnics gaining university status, and all higher education degrees being equal in terms of quality), degrees are ranked by prospective students, their families and employers on the basis of the perceived status of the awarding institution (Marginson, 2004), with pre-1992 universities being regarded as the most prestigious.

Leaving home at the age of 18 in order to attend university is peculiar to the British middle classes (Allatt, 1993; Patiniotis & Holdsworth, 2005; Christie, 2009), and is viewed as an important first step towards adulthood and independence (Patiniotis & Holdsworth, 2005). It also affords students the

freedom to construct a new and individual identity as they remove themselves from their families and 'home space' (Giddens, 1991). The move away from the family home to attend university is considered a rite of passage as the student moves into adulthood (Gibbons & Vignoles 2012). Students often choose to move away from home, and may choose the location of the university in order to experience 'city life' (Moogan *et al.*, 1999; Kallio, 1995); both the glamour and the 'distance' associated with a particular university may be particular factors affecting choice.

The location of the university may be chosen in order to mitigate the costs of higher education (Des Jardins *et al.*, 2006; Simões & Soares, 2010), and less affluent students may remain in the family home as they seek to reduce the level of debt they might accrue (Davies *et al.* 2008; Evans, 2009). Although an analysis of university applications for 2014/15 suggests there are fewer 18 and 19 year-old students applying for courses where they would live at home than was the case in 2010 (Independent Commission on Fees, 2014), some commentators note that students of lower socio-economic status are more debt-averse than their more affluent counterparts (Paulsen & St John, 2002; Callender & Wilkinson, 2003; Barr, 2004; Asplund *et al.*, 2008; Callender & Jackson, 2008; Callender & Jackson, 2005). Although more recent studies, though, suggest that student debt has now become a 'ubiquitous feature' of student life (Harrison *et al.*, forthcoming). Whilst students of lower socio-economic status are still more circumspect with regard to debt than students from higher socio-economic backgrounds (Thompson & Bekhradnia, 2011; Wilby, 2012), these same students are beginning to view debt in a more positive light, as they realise that it enables them to access the potential for professional careers, and so it may be considered a 'safe investment' (Harrison *et al.*, forthcoming).

Therefore, the literature appears to suggest that the main determinant of subject choice is the socio-economic group to which the student belongs rather than any rational economic model, when taking into account increased tuition fees. Consequently, this leads to the following hypothesis:

*Hypothesis 3a: Facing substantially higher fees, the mean distance travelled by students from the most deprived backgrounds (those classified in IMD Quartile 1) between home and university will be less than under previous regimes.*

Although more students are choosing to stay at home for financial reasons (this is an economically rational decision for students from non-traditional backgrounds (Christie, 2009)), there are also other reasons that students might choose to live at home, especially those from backgrounds that do not

normally favour higher education. Young people maintain emotional attachments to locally based networks of family and friends, and location is also a consideration in terms of family commitments (Evans, 2009; Raey *et al.*, 2001b). Studying close to home is an important cultural factor for certain ethnic groups (such as girls from Pakistani and Bangladeshi families (Gibbons & Vignoles, 2012)) and is sometimes a norm of students' socio-economic group (Evans, 2009; Reay 1998; Forsyth & Furlong, 2003). Equally, students may have a strong emotional attachment to their family and friends (Christie, 2009), especially whilst they are participating in the unfamiliar and 'risky' environment of a university (Read *et al.*, 2003; Pugsley, 2004; Reay, 1998). This trend to live at home and study at a higher education institution nearby is more apparent in urban, post-1992 universities (Gibbons & Vignoles, 2012).

This can be linked with the literature reviewed earlier in this chapter in the section on the socio-economic composition of the student population, in which it was noted that some commentators suggest there is an inequality in education outcomes between students of different socio-economic groups. It has been suggested that educational outcomes influence both whether students will go to university and which university they will study at. Given the propensity of students from less affluent backgrounds to offset the costs of university by staying closer to home, the following hypothesis can be formulated:

*Hypothesis 3b: In the light of increased fees there is a positive relationship between the academic tariff on entry to university and the distance between the student's home and the place of study at NTU.*

Furthermore, the evidence of the literature reviewed earlier in this chapter with regard to subject choice, with students from lower socio-economic groups more likely to choose vocational subjects, leads to another hypothesis:

*Hypothesis 3c: Following the introduction of higher fees, students from the local area are more likely to enrol in a vocational subject at NTU.*

### **University reactions to increased fees**

The recent changes in higher education funding in England have been implemented in the context of a higher education system that has over the past two decades become increasingly marketised. The increasing tuition fees that universities have been able to charge have been accompanied by

additional regulation as successive UK governments have sought to temper the 'excesses of market behaviours' (Brown, 2013:xiii). However, the findings of recent and past studies suggest that in the face of increasing tuition fees, universities take action to ensure that they are still able to attract students in order to maintain, or increase income.

Evidence of this is an increase in universities undertaking marketing activities similar to those of private sector organisations (Hemsley-Brown & Oplatka, 2006; Jongbloed, 2006; Maringe, 2006), accompanied by an increase in widening participation activities (McCaig, 2009). Latterly, social media platforms such as Twitter and Facebook have been used by universities to attract potential students (Constantinides & Zinck Stagno, 2011). Some studies suggest that widening participation-type activities, such as university open days, have a significant influence over student choice (Robertson, 2010; Binney & Martin, 1997). Furthermore, universities have, through the use of marketing, enhanced the perceived value of higher education (Leslie & Brinkman, 1987; Woodhall, 1989). Other actions include a reduction in admission criteria as a method of negating any relationship between tuition fees and enrolment (Abbott & Leslie, 2004; Leslie & Brinkman, 1987).

Under the new funding regime, the government require universities to publish additional information about the courses they offer, in order to better inform student choice (UK government, Department of Business, Innovation and Skills, 2011). Using university published information, *The Times* and *The Guardian* newspapers publish annual university league tables, ranking each UK university on a number of parameters (*The Guardian*, 2013; *The Times*, 2013). These ranking tables very much capture the current zeitgeist, with the government demanding additional information and universities making great efforts to enhance their position in the different league tables (Hazelkorn, 2008). Some studies suggest, however, that university rankings actually have limited influence over student choice (Horstschräer, 2012; Soo & Elliott, 2010), and that students will use league tables to make a decision about which university is most suited on the basis of the measure that is of particular interest to them (e.g. research), rather than the ranking of the university as a whole. Conversely, for courses or universities that are highly ranked, this may actually discourage some people from applying to those institutions (Soo & Elliott, 2010).

Some students use these league tables as a proxy measure of reputation (Hazelkorn, 2008). However, the reputation of the university can have differing values depending on the student. For those students wishing to enter an elite, high research-ranking university it is the academic reputation and the increased competition for places that is a major motivating factor (Briggs, 2006). The findings of



Whitehead *et al.* (2006) suggest that the anxiety surrounding the application process required by elite universities and the subsequent fear of failure may deter some able students from applying. Conversely, for those students of lower academic attainment, the reputation of a university for having lower entry requirements is a significant consideration (Briggs, 2006).

As discussed earlier, despite the best intentions of those who developed the revised system of university funding in England (whereby it was expected that universities would set their tuition fees to reflect their position in the higher education market), in reality most universities have set their fees at £9,000, the upper end of the allowed fee range. However, in order to charge tuition fees in excess of £6,000 per year, universities are required to seek approval for their access agreements (means-tested financial aid programmes designed to reduce the cost of higher education for students from lower socio-economic groups) from the Office for Fair Access (Bolton, 2013). Recent statistics from the Office for Fair Access (OFFA, 2014) suggests that universities are increasing the level of spending on financial aid from £364m in 2008/09 to a predicted £543m in 2014/15, although there is a view that those universities not charging the full £9,000 will continue to increase their headline fees whilst, at the same time reducing the number of fees waivers (Bolton, 2014). Some universities are actively marketing financial aid as part of their offer (McCaig, 2009; Hills & Richards, 2012). Essentially, universities have been using grants as a way of promoting their own courses, rather than to widen the participation of prospective students from lower socio-economic groups (McCaig, 2009), with some commentators arguing that despite the increase in spending on widening participation and financial aid programmes to increase participation there has not been an accompanying increase in the participation of students from lower socio-economic groups (Gorard *et al.* 2008).

However, despite fair access agreements and the use of financial aid either as a method to widen participation or indeed as a marketing tool to enhance university recruitment activities, the loan system by which students fund themselves through university may actually discourage those from lower socio-economic groups from accessing university. Research suggests that students from lower socio-economic groups are debt-adverse and are more likely to consider higher education to be a debt rather than an investment (Callender & Jackson, 2008; Callender & Jackson, 2005). Students are, however, more sensitive to financial aid in the form of grants than loans (Heller, 1997). A further consideration is the timing of when potential students are able to understand what financial aid will be available to them. If students and their families have the relevant information on the financial aid that is available to them earlier in their educational career, attention can be focused on achieving the academic requirements for accessing university (Tierney & Venegas 2009; Mathers & Parry, 2009).

Some studies suggest that students apply to university based on the level of financial aid they can access (Des Jardins *et al.*, 2006; Kallio, 1995). However, whilst tuition fees are widely published and discussed, the financial aid, which individual students can access, is not always known until after enrolment (Leslie & Brinkman, 1997). As a result there could be a negative impact on recruitment, as economic considerations are clearly important to students (Smith & Cavusgil, 1984).

A lot of attention is paid to how the cost of a university education influences students from less affluent backgrounds. In a paper published in 1997 the level of tuition fees ranked third in order of importance after the academic qualifications of the student and parental educational attainment (Leslie & Brinkman, 1997). This may lead to the tuition fees charged by institutions becoming an important attribute as prospective students consider their choice of university, irrespective of socio-economic status (Hossler & Stage, 1992; Leslie & Brinkman, 1997; Wilkins *et al.*, 2012). There is also a view that, due to the availability of financial aid, increasing tuition fees may not impact on the participation of students from lower socio-economic groups as much as on students from middle-and higher-income families (Flannery & O'Donoghue, 2009).

Accordingly, in the light of the new pull factor of increased fees, it is expected that universities have changed behaviours in order to recruit more students. Therefore:

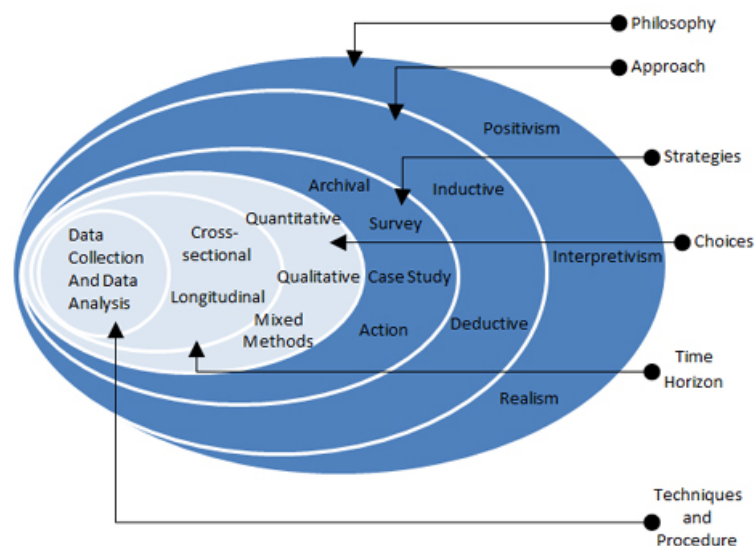
*Hypothesis 4: Faced with cohorts of students paying substantially higher tuition fees, universities are likely to have changed their entry requirements in order to recruit more students.*

The literature review and the emergent arguments have established a number of hypotheses for testing. Chapter 4 will consider the methodology for the testing of these hypotheses.

## Chapter 4: Methodology

This chapter provides the rationale for the choice of the methodological approach taken and the most appropriate method of data collection and analysis. On this subject, Avison *et al.* (1999) provide sage advice as they postulate: 'Whether or not an approach is appropriate depends on the research topic and the research questions being addressed.'

The chapter is presented using Saunders *et al.*'s (2009:102) Research Onion (Figure 5) as a framework for understanding the different stages that have been considered in the research process. This chapter will begin with a discussion of the philosophical stance taken in this research, and will then move on to an examination of the chosen approach, the research strategy, the choice of method used, the time horizon and the instrument used for data collection and analysis. The chapter will conclude with a consideration of any potential ethical issues and limitations of the study.



**Figure 5: Research Onion**  
(Saunders *et al.*, 2009:102)

### Research philosophy

Philosophy is the first layer in the Research Onion. According to Mac Rory and Byrne (2011), philosophy underpins much of our practice and a lot of what we think, say and do. The approach of a researcher can be either subjective or objective, with these processes being regulated by a choice of different ontological and epistemological stances (Holden & Lynch, 2004).

The choice of ontological and epistemological stance is wide and open, as within the field of management research there is one 'striking feature to which there is consensus', and that is that there is no agreed ontological and epistemological paradigm (Tranfield & Stakey, 1998). Whilst there are no constraints with regard to the choice of ontological and epistemological stance, epistemology provides the philosophical foundations upon which the methodology of a research project is built (Crotty, 1998), and ontology is considered to be the human conceptualisation of reality (Smith, 1999).

As discussed in Chapter 3, the natural epistemological preference for this study is that of a positivist: 'An epistemological position that advocates the application of methods of the natural sciences to the study of social reality and beyond' (Bryman, 2001:542).

The early 16th-century philosopher and sociologist, Auguste Comte (1798–1857), is widely acknowledged to have developed the concept of positivism in its modern-day sense. Comte posits that society operates in a similar manner to the scientific world, according to its own laws (Pickering, 1993:192). Comte's original philosophy has been developed to one where it is thought that researchers should approach their research using laws that are scientifically established and methods that enable an objective reality to be observed, experimented and compared (Crotty, 1998; Abercrombie *et al.*, 2000:26). One of the objectives of positivist research is the creation of universal laws that can be used to predict probable behaviours with a level of certainty (Fisher, 2004:19). Despite Comte's notion that positivism is similar to methods grounded in the natural sciences (Pickering, 1993), Comte argued that social facts have no scientific value until they are related to other social facts, and without these social facts knowledge has no rational utility (Simpson, 1982). However, it is the distinguishing features of positivism that allow hypotheses to be tested, and the reliance on data to support findings (Wicks & Freeman, 1998) that lends itself to this piece of research. Aligned to this is the application of a positivist stance in an organisational study (such as this thesis), which allows a value-free scientific approach (Astley, 1985). It is noted that positivist epistemology has an increasingly pervasive influence over research conducted within organisations (Astley, 1985; Deetz, 1996; Bryman & Bell, 2011).

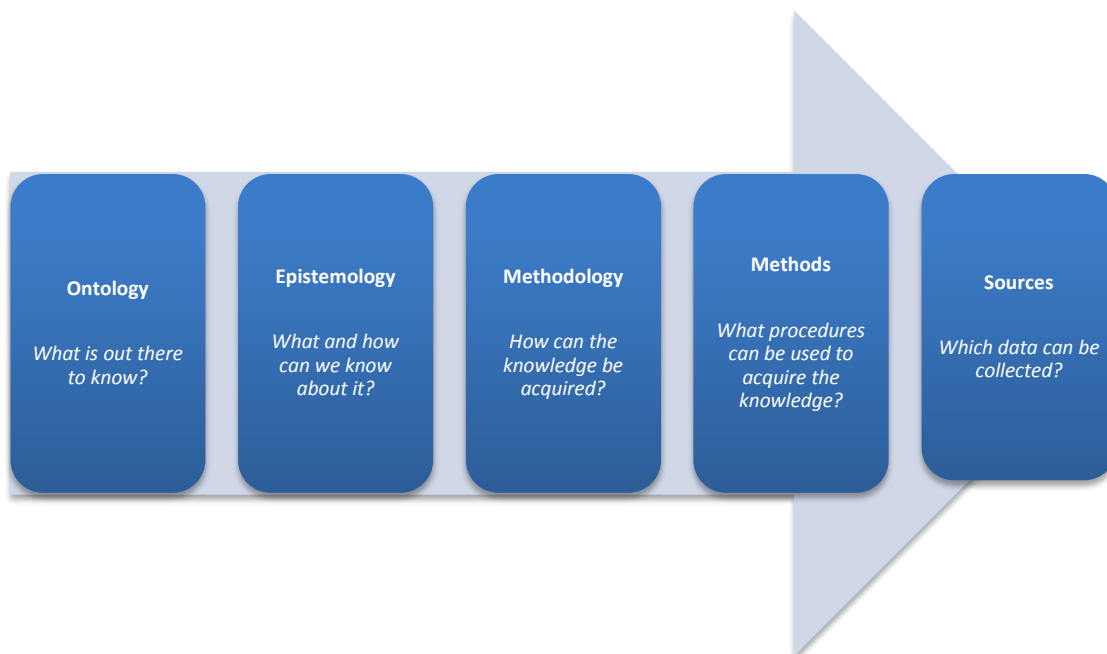
Researchers' ontological position reflects what they think they can research (Grix, 2002). Given that this piece of research is been undertaken using quantitative data, the most appropriate position is that of objectivity. According to Mac Rory & Byrne (2011:5): 'An ontological orientation [is one] that infers that social entities are separate from the people that comprises them.' Objectivity in this context does not mean the characteristic of a person, but a procedure relating to the collection of data and the resultant analysis (McMillian & Schumacher, 1997: 10).

## Research approach

The second layer of the Research Onion is the approach that a researcher can take: inductive or deductive (Saunders & Lewis, 2012). In this section the rationale for the choice methodological approach and the most appropriate method of data collection and analysis is discussed.

There needs to be an acknowledgement and an understanding of the interdependencies between ontology, epistemology, methodology and theory (Easton, 1995; Ryan *et al.*, 2009). It is the ontological and epistemological stance of researchers that influences their choice of approach and research methods in any given study. Those ontological and epistemological positions shape not only the research questions in the first instance, but also how they are posed and answered (Grix, 2002). Ontology can be described as ‘the science of study as being’ (Blaikie, 1993), whilst epistemology considers the most appropriate way to inquire into ‘the nature of the world’ (Easterby-Smith *et al.*, 2008:32).

Figure 6 shows the both the directional and logical relationships between the constituents of a research project



**Figure 6: The Directional and Logical Relationship between the Constituents of a Research Project**  
(Adapted from Hay, 2002:64)

There must be an alignment between the philosophy of the researcher and the methodology that also considers the research question. A lack of coherence will result in the final piece of work potentially being 'undermined' (Blaikie, 1993). The methodology and the interdependencies of the epistemological and ontological positions of this research project are as follows:

In this research a number of hypotheses are tested using quantitative data in order to gain an understanding of any potential future patterns that could inform university policy. According to Saunders and Lewis (2012) this is a deductive approach, as it allows theories to be tested using existing data. With a positivist epistemological stance and an objective ontological assumption, the deductive approach of testing a hypothesis from the data collected provides a coherent link between the research philosophy and the research instrument. However, whilst there should be no confusion between objectivity as a personal trait and objectivity in terms of procedure to collect the relevant quantitative data, caution should still be exercised over the level of objectivity that can be achieved, notably in a research project that is undertaken within an organisation within which the author is employed (Fisher, 2004:19).

### **Research strategy**

The third layer in the Research Onion is the strategy used to undertake the research. This section provides the reasoning for the choice of research strategy used to test the hypotheses.

The literature review suggests that the recent shifting of the costs of higher education away from the state and onto the student manifests itself in a change whereby universities now view students more as consumers of higher education; this in effect moves the balance of power away from the universities and towards the students. Whilst it is likely that elite institutions will remain in the enviable position of being able to select the best students, the reality for higher education providers outside the Russell Group is that they now have to actively recruit students. A case study can link the impact of increasing tuition fees and the resultant behaviours of the principal actors (students and universities) within a specific context. The use of a case study explores the evolution and dynamics of the relationship between increased fees and the actions or reactions of the principal actors relevant to the context in question.

As discussed in Chapter 2, this thesis (Document Five) is a development on Documents Three and Four, both of which used a case study approach. To change from a case study approach at this point would be inconsistent, and Documents Three to Five could not be presented as a suite of research.

Theoretically and conceptually the impact of increased fees across the whole student population is not widely understood. There is a lack of current literature to provide a substantial theoretical framework that can be used to analyse the impact of increasing fees on the student population. The available literature described in Chapter 3 concerns itself predominately with how increasing tuition fees impact students who wish to access university but who come from socio-economic groups that do not traditionally participate in higher education. As such, current literature does not provide an adequate theoretical framework that can be usefully and meaningfully apply to a research study. The scarcity of current literature may be due in part to the fact that the higher level of fee came into effect fairly recently (September 2012), whilst tuition fees generally have been in place in England since 1998; looking into the impact of increased tuition fees is therefore very much a contemporary concern. In this milieu, case studies are a useful tool for investigating a 'contemporary phenomenon within its real-life context' (Yin, 2003a:13). Accordingly, it can be argued that the use of a case study method is particularly suitable when very little is known about the phenomenon under investigation (Yin, 2003b). Additionally, a single case study is a particularly suitable approach when it is not possible to separate the phenomenon under investigation from the case being explored as a case study; a single case study, in particular, allows the researcher to look for the interactions within that one single context (Stake, 1995) and to provide an insight that can resonate with the reader of the research (Fisher, 2004). Therefore, the context of students' and universities' reactions to increasing fees cannot be separated from the organisational context: that is, the university.

Table 2 below summaries issues that should be considered when undertaking case study research (adapted from Yin, 2003a:21).

**Table 2: Issues to Consider When Undertaking a Case Study (Yin, 2003a:21)**

Issues to consider
1. The research question(s)
2. Propositions
3. Unit(s) of analysis
4. The logic of aligning data to the propositions
5. The criteria against which findings can be interpreted

As discussed earlier, the unit of analysis for this research project will be NTU. This adheres to Yin's advice that the unit of analysis and the case study should be aligned with the research objectives (Yin, 2003a). Additionally, by using a single case study any issues of access and feasibility can be easily overcome (Yin, 2003a) and creates the opportunity to use a variety of methods and depth of study (Hamel, *et al*, 1995). The single case study is particularly pertinent when both the issue and its context are under investigation (Yin 2003a;32) as it is likely that theoretical insights can be drawn out and the findings used for initiating further research, which could be extended to include other universities.

Given that this thesis is as an investigation into the nature of the student population accessing Nottingham Trent University, therefore the only appropriate method is a single case study, notably given the research objectives noted in page 15. Should the research objectives to have included seeking for generalisations, then using a single case study would be problematic. Notwithstanding, the case study approach, notably the single case study is not without its critics. Limitations include the potential for bias (Amaratunga & Baldry, 2001) and a limited potential to make wider generalisations (Benbasat *et al.*, 1987). Consideration, though, should be given to how representative one case study can be (Fisher, 2004:70). Silverman (2005:129) counters this apparent shortcoming by suggesting that a case study is of interest if it provides a demonstration of a specific practice or characteristic. Silverman further postulates that as context is inescapable any case study will reflect it (2005, 134). The concept of generalization, anyhow, has been honed and qualified; Bassey provides 'fuzzy generalisation' as a counter to outright scientific generalization (Bassey, 1999:12) and Mabry compares petite and grand generalisations, with the former being suitable for single case studies (2008:22). Gobo makes reference to the 'cumulability of knowledge' that may lead to legitimate generalization using a sequence of case studies (2008:198), so a single case study such as the undertaken in this thesis which uses NTU only, can be considered to contribute, at least to some extent to a broader understanding of a shared issue across the English higher education system.

Whilst the issue of bias may be of concern in this case, as the data that is used for this study is within the domain of the researcher's role at NTU, it could be argued that undertaking a rigorous and systematic approach will minimise the potential for a focused approach and will help to support validity and reliability. Although it should be acknowledged that NTU operates in a national context and that a single case study is only partially reflective of the national situation. However, higher education sector in England is a complex environment with legacies which reach over many decades and includes universities of different types, some of which could be considered 'similar' to NTU.



Therefore external data, to relating to the national situation, where available, will be used to provide further context against which to set this single case study.

### *Reliability and Validity*

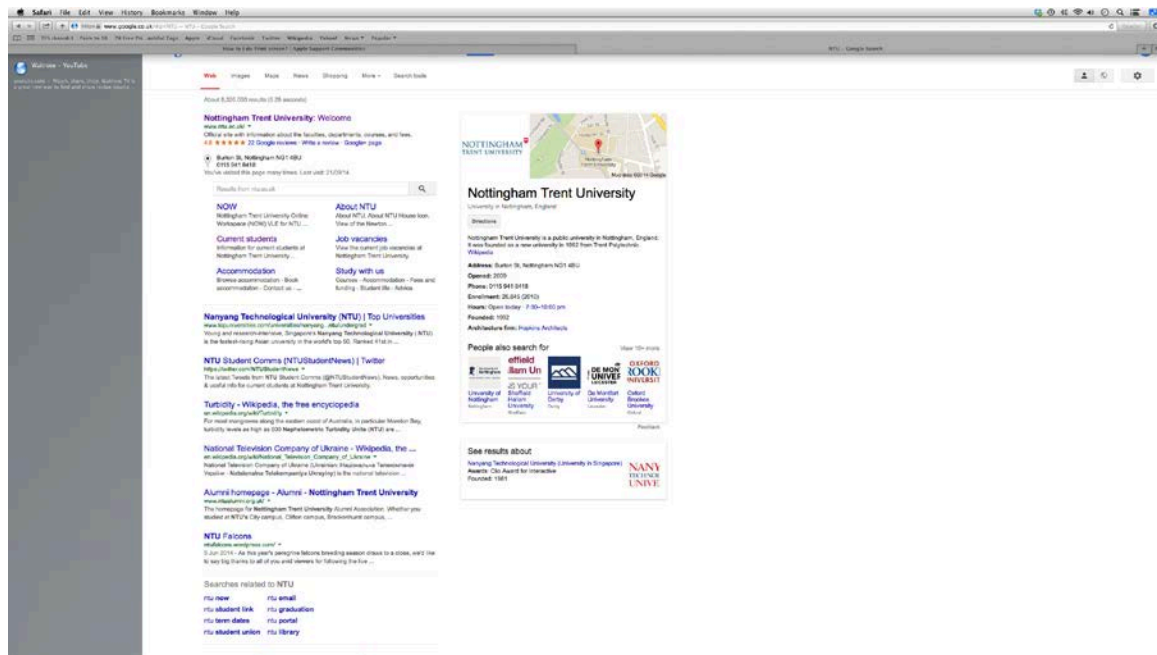
The validity and reliability of case study research is a key issue and needs further consideration. A high level of both validity and reliability in a case study provides not only trust in the data that has been collected but also confidence in the application of the data and the resultant findings, which can be used in management decision-making (Riege, 2003). In order to achieve high levels of confidence in validity and reliability, the research will be designed subject to the following ‘tests’ noted in Table 3. By including these design tests, it be demonstrated that the study not only has the required academic rigor but is also relevant to the market and the environment that it references (Amaratunga & Baldry, 2001).

**Table 3: Summary of Research Tests to Consider When Undertaking a Case Study (Adapted from Yin, 2003a:34)**

Tests suggested by Yin		Tests relevant to this case study
<b>Construct validity</b>	Establishment of the correct operational measures for the concepts being studied.	In order to test the hypotheses that have emerged from the literature review, the following measurements have been identified as being necessary to ‘test’ the hypotheses: academic attainment on enrolment at NTU, socio-economic group with reference to the student’s IMD score, distance between home and place of study, and subject enrolled on upon entry to NTU.
<b>Internal validity</b>	Establishing a causal relationship, where certain conditions are shown to lead to other conditions. This is different from spurious relationships.	A review of the literature suggests the existence of possible relationships between the changes in funding, student demographics, and the choices that students make. These form the basis for the hypothesis to be tested.

<b>External validity</b>	Establishing the correct domain to which the findings can be generalised	The domain will be NTU for this study using longitudinal data.
<b>Reliability</b>	Demonstrating that all aspects of the study can be repeated, with the same results.	There will be one data set that contains, for each student, every operational measure noted under 'Construct validity' above. From this data set, the relevant data will be extracted and manipulated to test each hypothesis. By using this 'one version of the truth', tests can be repeated with the same results. The test will be undertaken using a 100% sample size.

Notwithstanding the concerns about the limited ability to generalise from a single case study, NTU shares an environment with other similar universities, as illustrated by Figure 7 through some very anecdotal evidence: a screenshot of the results of a Google search for NTU. It can be seen that people who search for NTU also search for the University of Nottingham, the University of Derby, Sheffield Hallam University, De Montford University and Oxford Brookes University. NTU would consider the latter three to be similar universities, and of course NTU shares a city with the University of Nottingham. Therefore, it could be considered legitimate to make limited generalisations from the results obtained, and as such it is appropriate to use a single case study for making, albeit tentative, interpretations.



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**Figure 7: Screenshot of Google Search Results for NTU**

(Source: Google, 2014)

Therefore, it legitimate to make generalisations and as such it is appropriate to use a single case study.

## Data collection choice

The data collection choice forms the fourth layer in the Research Onion (Figure 5). There are a number of options that a researcher can consider when undertaking research: quantitative methods, qualitative methods, mono-methods and multi-methods. A mono-method is a single data collection procedure, and a multi-method is a combination of two or more data collection procedures (Saunders *et al.*, 2009). The method of data collection should be appropriate to the research question (Bryman & Bell, 2011).

For this study, given the research objectives of testing a number of hypotheses, the mono-method approach of a quantitative research technique is appropriate. Being able to examine how students and the University reacted to changes during the first two years of higher tuition fees in the 2012/13 and 2013/14 academic years through the use of quantitative data, may enable the interpretation of the behaviours of both of these groups, as well as some prediction of their possible behaviours. This adheres to Comte's notion of obtaining positivist knowledge through observing data (Hall & Elliott, 1999).

The literature review in Chapter 2 on the impact of higher tuition fees on student behaviours was quantitative in nature (Chowdry *et al.*, 2010; Simões & Soares, 2010; Paulsen & St John, 2002; Morgan, 2002; Leslie & Brinkman, 1987; Heller, 1997). Although Galindo-Rueda *et al.* (2004) undertook a study of the decision-making process of working-class students using a quantitative approach, a study concerned with *why* students make the choices they do regarding higher education lends itself more to a qualitative approach (Robertson, 2010; Moogan, 2011; Hemsley-Brown, 1999; Reay *et al.*, 2009).

Quantitative analysis has its roots in empirical social science research, as early social scientists, notably in the fields of psychology and sociology, sought to imitate the scientific methods found in the natural sciences to build knowledge (Punch, 2005). Quantitative research is described as being the collection of numerical data and the use of this data to discover relationships between theory and research through a deductive approach.

Primary data will be used to assess the ‘what’ in this study, and subsequent interpretive discussion will be used to speculate upon the ‘why’.

### **Time horizon**

According to the Research Onion (Figure 5), there are two different types of techniques relating to the time horizon over which research is undertaken: longitudinal and cross-sectional (Saunders *et al.*, 2009). Longitudinal studies are those that use data collected over a period of time – what Saunders *et al.* (2009:155) refer to as a ‘diary’; and cross-sectional studies are those that are only concerned with focus on data collected at a specific time.

For a number of the hypotheses that this study is seeking to test, notably any changes to subject demand, a longitudinal analysis is appropriate. This type of analysis lends itself particularly well to this study, as the thesis primarily compares ‘before’ and ‘after’ data relative to the increases in tuition fees.

### **Data collection**

In Document Four one data source was used to pursue several different research objectives. One of the significant limitations of using this single source of data related to understanding the impact of

increasing tuition fees on the subjects that students chose to study at university. Although the single data source provided an insight as to the subjects that students had enrolled on upon entering NTU, this pattern of enrolment may not have been a true reflection of subject demand, but rather the result of interventions taken by NTU to ensure that the supply of places met the demand of students. In the concluding remarks in Document Four, it was suggested that whilst enrolment data is useful for a number of facets of examining the impact of increased fees, the inclusion of application data over the same period of time would have improved the findings and enriched the data, since not all applications by students are granted enrolment by the University.

Therefore, this thesis is a piece of quantitative research using secondary data from two different data sets. The majority of the data will be extracted from NTU's Banner system, which holds information pertaining to all students from when they enrol at the University through to graduation, and acts as the definitive record for each and every student. The information held in the Banner system has a number of sources, including students themselves, who are required to submit certain details such as date of birth and address. Other information, such as the course on which they are enrolled and their academic attainment upon entry, comes from the NTU's CRM system. Data relating to examination results, choice of modules and fees payable are input by various different administrative functions across the University. The importance of the data contained in the Banner system is such that it is used as the definitive record for a number of different functions across the University.

In order to overcome the limitations of using just enrolment data to test whether increasing fees impact subject choice, a second source of data will be used. The University's CRM system also contains a data set that relates to the applications made to NTU by prospective students as part of the application process. In order to be offered a place to study at NTU, students are required to submit an application either through the University and Colleges Admission Service (UCAS) or directly through the University's own admissions system, depending on the student's country of origin and level of study. The CRM system captures all these applications, regardless of their source (UCAS or direct), and records whether or not the applicant was made an offer to study at NTU.

The data used in this study will be the relevant data set from the University's CRM system. This is an alternative method of data collection to creating a primary source of data. Whilst acknowledging that the data has already been collected by someone else for other purposes, there is confidence that by using this data in its rawest form rather than using a report that has been published for another

purpose, this research will not fall foul of what Blaikie (1993:184) describes as 'removed' from the original source of the data, with the potential consequence of a reduced quality of data.

There are many advocates of using secondary data sets, whose advantages include the ease, affordability and speed in which the data can be collected (Stewart & Kamis, 1984; Punch, 2005; Procter, 1996). It is noted that caution should be exercised with regard to how the data is extracted, manipulated and interpreted using the correct methodology for answering the research question (Procter, 1996). Given the advantages outlined above and the nature of the research hypothesis, the use of this secondary data is the only option. The precaution of heeding the advice of Procter (1996) to discuss the use of secondary data with an experienced researcher will also be taken.

The reform to higher education funding applies to English Universities only; as such this thesis uses data related only to eligible English-domiciled students.

Clearly, there are many personal attributes that could be taken into account when evaluating students' choices and behaviors. This thesis forms the final piece of work of the Doctorate of Business Administration, which has the major tenet of being intended for use in a management context, particularly financial management. As such, the data extracted concentrates on academic ability (tariff points), home postcode (to understand socio-economic demographic and distance travelled between home and place of study, and the socio-economic composition of the student body). The academic ability on entry is important from a management perspective, as a change in the ability of students will have an impact on the teaching and learning style utilised, thus impacting the resource required for there to be both effective learning and teaching. Understanding the socio-demographic composition of the student body will help determine the level of financial aid the university is required to provide to students from the poorest homes as part of the Office of Fair Access Agreement (OFFA) in order to charge fees over £6,000 per year. Finally, as NTU has entered into an agreement with a private provider for student residencies, should students remain at the family home in order to mitigate some of the costs of going to university, the business model which forms part of this agreement may be compromised. Although the inclusion of other factors such as gender, ethnicity and age may be of interest from a sociological perspective, from a financial management perspective these factors are not as pertinent in terms of the impact on resource requirements as academic ability, socio-economic composition or the distance travelled between home and place of study. This also aligns to the NTU's market segmentation strategy, which similarly eschews considerations of gender, age or ethnicity. Details of the data available from the two university data sources are as follows:

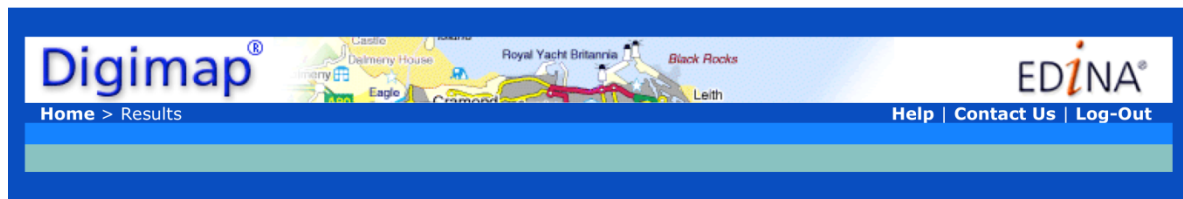
As discussed, the majority of the data used in this study is secondary data from the Banner system. NTU's Student Data System Team were able to provide the following anonymous data from the 2008/09 to the 2013/14 academic years (a six-year period) for all eligible English-domiciled full-time students entering their first year of study at NTU:

- Year of entry
- Academic school
- Course of study
- Number of A-level points achieved (tariff points)
- Home postcode

The second data set is an extract from the CRM system and provides the resulting data from the 2008/09 to the 2014/15 academic years (a seven-year period), again on an anonymous basis:

- Year of proposed entry
- Number of applications by individual subject

For some of the hypotheses there is a requirement for the use of further data sets. In Document Four, the Code-Point (Ordnance Survey, 2013) and English IMD external data sets were used as supplementary data sets in the research, which enabled a comprehensive master data set to be created. The intention is to utilise these external data sets again in this thesis. Code-Point is provided free by the OS for each postcode in the UK and provides a range of precise information for each geographical location, such as the number of postal delivery points, the NHS area code, the local authority and the electoral ward (Ordnance Survey, 2013). The data is updated four times a year. For one-off postcode inquiries the available data is displayed visually via the OS' Digimap analysis tool; Figure 8 illustrates the type of data available for each postcode.



Enter your postcode:

Enter your postcode:

Postal Unit:	<b>NG161RD</b>
Positional Quality:	10
Is PO Box:	N
Delivery Points:	32
Delivery Points Quality:	32
Domestic Delivery Points:	32
Business Delivery Points:	0
POBox Delivery Points:	0
Matched Addresses:	32
Unmatched Addresses:	0
Easting:	452217
Northing:	343113
NHS Area Code:	E18000004
NHS Area Name:	East Midlands
County Code:	E07000172
County Name:	Broxtowe District (B)
District Code:	E07000172
District Name:	Broxtowe District (B)
Ward Code:	E05006416
Ward Name:	Nuthall East and Strelley Ward

© Crown Copyright and Database Right 9<sup>th</sup> September 2013. Ordnance Survey (Digimap Licence)

**Figure 8: Example of Data Available by Postcode from Digimap**

(Source: Ordnance Survey, 2013)

For the hypotheses that relate to students' socio-economic background, the individual student postcode will be matched to its relevant local authority via the OS data, and linked to the local authority identifier using the ONS' IMD in order to ascertain a measure of deprivation. This will provide an understanding of the socio-economic background of each student.

The IMD is published by country (England, Scotland, Wales and Northern Ireland) on a four-yearly basis by the ONS. These indices of deprivation cover seven aspects of deprivation: Income, Employment, Health deprivation and Disability, Education Skills and Training, Barriers to Housing and Services, Crime and Living Environment, into a single deprivation score for each small area. A score of '1' indicates the highest level of deprivation, and the deprivation score ascends as the level of deprivation descends. The latest IMD was published in 2011. (Index of Multiple Deprivation, 2011). This thesis is an investigation into the nature of the student demographic following the introduction of higher fees, therefore an obvious route would be to use the individual IMD score relating to income. However, the review of literature has shown that the decision to attend university is multi-faceted and whilst there is a long-standing relationship between family wealth and university education (Chapman & Ryan, 2002) the decision to go to university includes the influence of parental occupation



(Weeden & Grusky, 2005; Harrison and Waller, 2010); achieving the required educational attainment at school (Blanden & Machin, 2004; Cameron & Heckman, 2001; Reay, 2006; Machin & Vignoles, 2004; Blanden *et al.* 2007) and the general environment in which potential students grow and go to school in (Carnerio & Heckman, 2002; Coelli, 2004). As the combined IMD score includes many of the facets that influence students choice of where and what to study at university, it is appropriate to use the combined score.

The IMD is not without its critics: deprivation is an individual or household specific phenomenon rather than a neighbourhood issue (Deas *et al.* 2003; Schuurman *et al.*, 2007); the IMD may have bias towards or against rural areas (Deas *et al.*, 2003; Tunstall & Lupton, 2003;) and have geographical limitations (Rae, 2009). Some of the criticisms directed at the IMD can readily be rebutted as the limitations noted are made in the context of the use of IMD to allocate government resources and influence fiscal policy (Lupton, 2002; Dietz, 2002). However, given that this thesis is an investigation into the nature of the student demographic following the introduction of higher fees, and that the IMD takes into consideration a number of the major influences over student choice, this IMD represents a commendable attempt at approximating the 'ideal' data for this purpose.

Matching the students' postcodes to the IMD via the CodePoint data gives an indication of whether the student population has changed. For testing any hypotheses relating to the distance that students travel between their home and university, a further instrument is required. Mapping the postcode of the students to their local authority through the CodePoint data can be further enhanced by matching the distance between students' home local authority and their NTU campus of study (Nottingham City Centre Campus, Clifton Campus or Southwell Campus), to determine whether the average distance has changed.

Due to the size of the relevant data set being manageable (35,737 records), the analysis will use all the relevant data from the 2010/09 to the 2014/15 academic years, rather than a selection of the available data. By using a 100 per cent sample, there will be higher levels of reliability and validity and therefore increased confidence in the findings of the research.

### **Data analysis**

The data analysis will be undertaken through the use of Excel spreadsheets for basic data manipulation, and the statistical software solution SPSS for statistical analysis.

The raw data will be tabulated in Excel to create a 'master database' that will include the supplementary data sets. This complete data set will be manipulated with the pivot table tool in Excel, which can be used to generate summary tables of data as each hypothesis is tested. A number of authors advocate the use of Excel pivot tables to analyse information and perform statistical analyses (Spiech, 2005; Palocsay *et al.*, 2010). For statistical analysis such as standard deviation, the data will be prepared in Excel and the analysis conducted through SPSS. The chart tool in Excel will also be used to generate charts and graphs as appropriate to present the findings in a more meaningful way.

Each hypothesis will be tested in turn, and will be subject to the following analysis plan:

- Test method: selection of the relevant test statistics
- Analysis of the data: the relevant computation will be used on the entire pool of data
- Interpretation of results: the hypothesis will be proven or found to be a null hypothesis

### **Ethical considerations**

The NTU Student Planning Data team ensured that any identifying data such as name and student number had been removed prior to releasing the raw data for analysis. Nonetheless, whilst it is not possible to trace specific students back to the attributes of the data set, there is still an ethical issue to be considered in that none of the students to which this data is attributable is aware of the researcher having the data or what will be done with it. NTU's Legal Services Manager has confirmed conformance to any obligations under the Data Protection Act 1998 (UK government, 1998), to which the University is legally bound. Compliance with data protection is ensured by not publishing any data that could be attributed back to a particular student, such as individual postcode data. In addition, the terms of enrolment to which all students agree upon entry to NTU, state that their data may be used for other purposes (Nottingham Trent University, 2013a). Therefore, it may be considered that students have implicitly given their permission for this data to be used for research purposes.

### **Limitations**

It would have been useful to use older data so as to extend the study over a longer period of time. However, due to the constraints of data quality, the Student Data Team who provided the data set were unable to guarantee that data prior to the 2008/09 academic year was of sufficient completeness

and quality to be used in such a study as this. Therefore, no data relating to the last change in fee regime in the 2006/07 academic year was able to be included in this study.

Whilst acknowledging that there are a number of limitations and criticisms of using a case study as a research technique, one of the aims of this thesis is to learn more about the potential impact of increased fees on NTU so as to be of use to NTU management. In this situation, the most appropriate course of action is to use a case study.

In Chapter 5, the hypotheses identified in Chapter 3 are tested using the data and methodology discussed in this chapter.

## Chapter 5: Findings

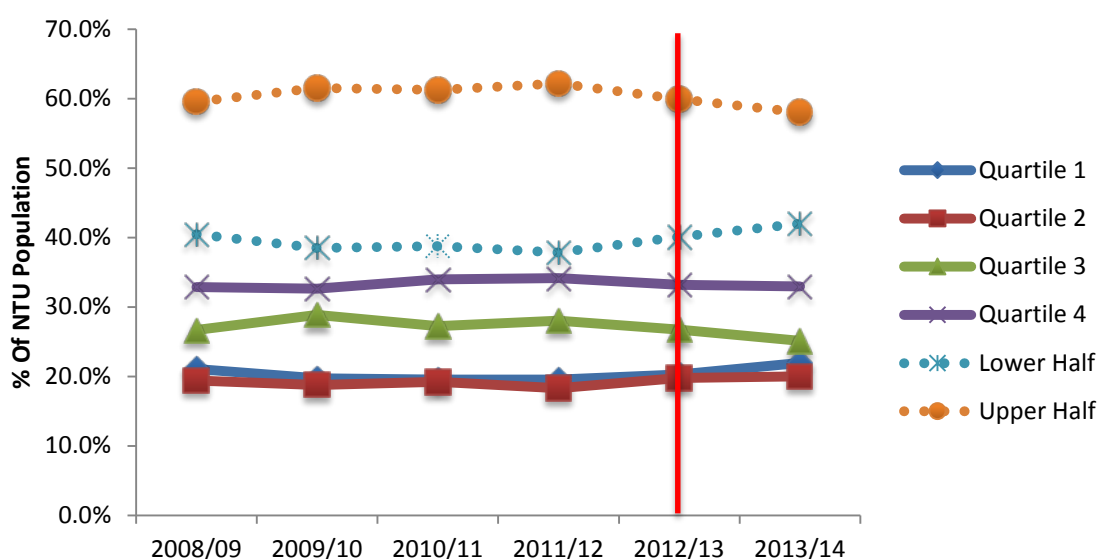
This chapter will seek to test the hypotheses that were established in the literature review:

- Hypothesis 1: In the light of increased tuition fees, there will be fewer students from more deprived backgrounds (those students classified in IMD Quartiles 1 and 2) attending university.
- Hypothesis 2a: In the light of increased tuition fees, there will be a change in the subjects that students apply to study at NTU: namely more students will apply for vocational courses.
- Hypothesis 2b: Students from the most affluent backgrounds (those classified in IMD Quartile 4) will be more likely than their less affluent counterparts to enrol on academic subjects.
- Hypothesis 3a: Facing substantially higher fees, the mean distance travelled by students from the most deprived backgrounds (those classified in IMD Quartile 1) between home and university will be less than under previous regimes.
- Hypothesis 3b: In the light of increased fees there is a positive relationship between the academic tariff on entry to NTU and the distance between the student's home and the place of study at NTU.
- Hypothesis 3c: Following the introduction of higher fees, students from the local area are more likely to enrol on a vocational subject at NTU.
- Hypothesis 4: Faced with cohorts of students paying substantially higher tuition fees, universities are likely to have changed their entry requirements in order to recruit more students.

Following the primary collection of data, additional external government data and internal NTU secondary data was used to aid analysis and provide context. The techniques described in Chapter 4 (Data Collection) were used to identify how this additional data should be used to aid interpretation and provide contextual information, each hypothesis was then tested.

**Hypothesis 1: In the light of increased tuition fees, there will be fewer students from the most deprived backgrounds (those students classified in IMD Quartiles 1 and 2) attending university.**

Figure 9 shows the first-year enrolment by IMD quartile from the 2009/09 to the 2013/14 academic years. It is evident that there are more students from higher IMD quartiles (Quartiles 3 and 4) enrolling at NTU (around 60 per cent) than students from lower IMD quartiles (Quartiles 1 and 2) in all the years considered.



**Figure 9: NTU First-year Student Population by IMD Quartiles (2008/09 to 2013/14)**

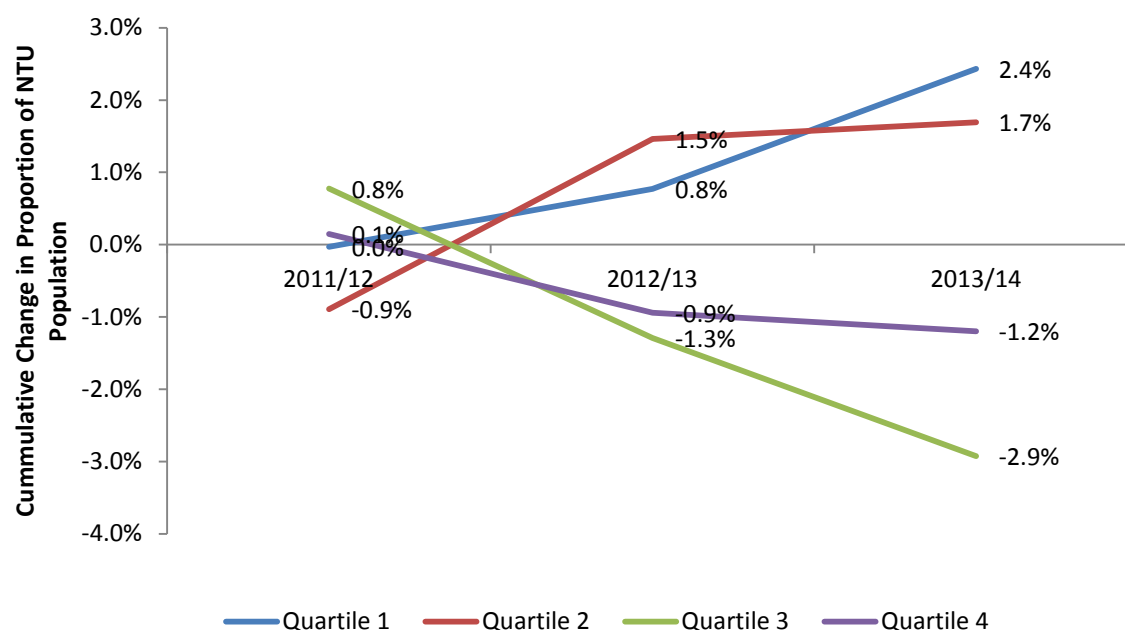
(Key: Quartile 1 = most deprived, Quartile 4 = most affluent)

Students at NTU from less affluent backgrounds (the lower half) generally made up between 37.8 per cent and 42 per cent of the sample population. Of note is that students from the lower two quartiles made up 40.4 per cent of the population in 2008/09, and this percentage slowly declined over the following three academic years to 37.8 per cent of the population in 2011/12. This was the last academic year prior to the introduction of higher tuition fees in England. In 2012/13, the first year of the new funding system, students from the two deprived quartiles made up 40.1 per cent of the

sample population, and in 2013/14 this proportion increased to 42 per cent, the highest proportion of all the academic years in this study.

In 2011/12 the percentage of students from more affluent households (Quartiles 3 and 4) totalled 62.2 per cent of the population compared to 61.2 per cent in 2012/13 and 58 per cent in 2013/14. This would suggest that in the year prior to the introduction of higher fees (2011/12) more affluent students enrolled at NTU at the expense of those students from less affluent backgrounds. However, in the two years of new funding (2012/13 and 2013/14) this pattern reversed, with the percentage of students from less affluent backgrounds increasing and the percentage of students from more affluent backgrounds decreasing (Figure 9).

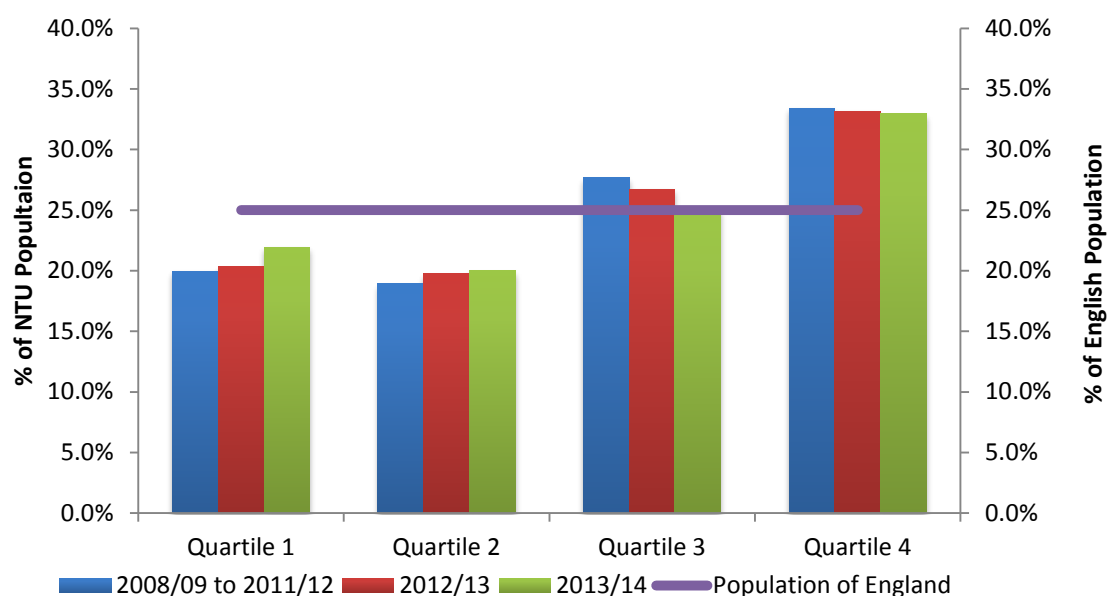
While it would be premature to claim the existence of an ongoing trend from two years of data, there are some interesting changes following the introduction of increased tuition fees in 2012/13. Figure 10 shows the 2010/11 enrolment data, which can be used as a baseline against which to compare any changes, as students who enrolled in that year did so prior to any changes in tuition fees being announced. When the announcement was made in October 2010, it may have led to the changes in enrolment behaviours in 2011/12, such as students not taking a gap year in order to avoid the higher fees that would apply from 2012/13. Using cumulative change analysis, Figure 10 provides some noteworthy information on these changes to the first-year NTU student population:



**Figure 10: Cumulative Changes to the First-year NTU Student Population by IMD Quartiles Using 2010/11 as the Base Year**

Despite increasing (in proportion) in 2011/12, the proportion of students from the most affluent backgrounds (Quartile 4) decreased cumulatively by 1.2 per cent in the first two years of higher fees to 2013/14. A similar trend can be seen to a greater extent in the proportion of students from the second most affluent backgrounds (Quartile 3), which decreased cumulatively by 2.9 per cent. For students from less affluent backgrounds, the opposite trend is true. The proportion of students from Quartile 1 (the most deprived backgrounds) increased cumulatively by 2.4 per cent in the two years following the introduction of higher fees in 2012/13, whilst the proportion of students from Quartile 2 also increased cumulatively over the same period by 1.7 per cent to 2013/14.

These slight changes in the proportions of first-year student numbers since the increase in fees has meant that the proportions of students from the upper and lower quartiles are moving more towards parity: student numbers from Quartile 1 have increased those from Quartile 4 have decreased. As 100 per cent of the population has been used, the change noted here is a real change and these observations are not subject to a sampling error.



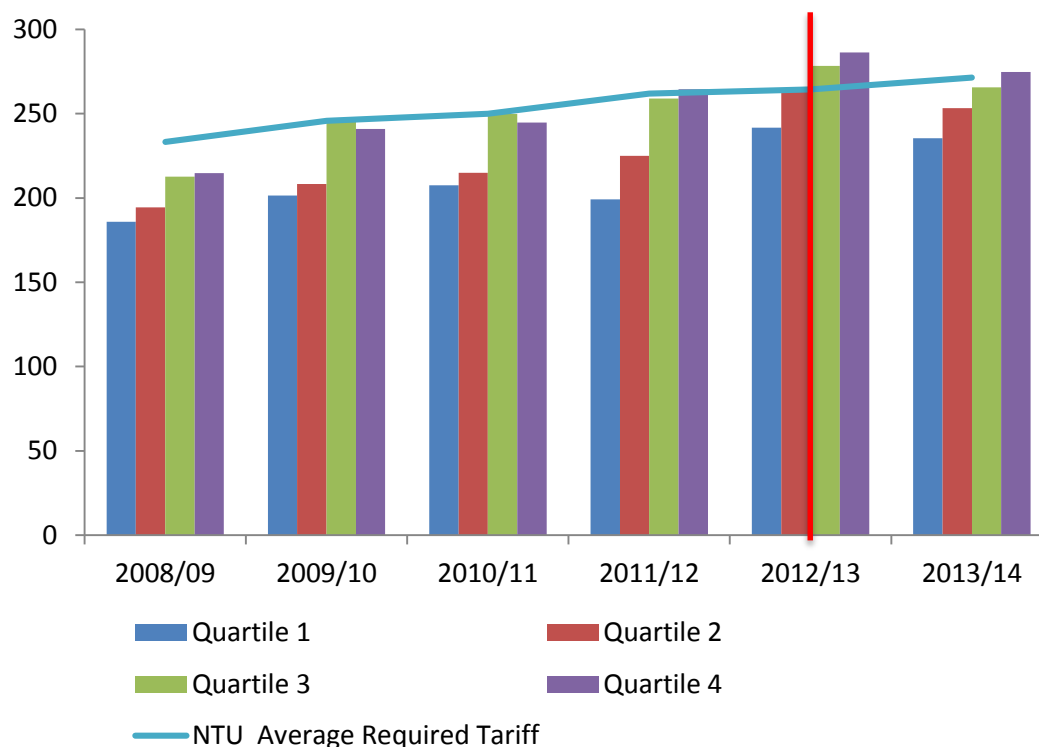
**Figure 11: Change in NTU Student Population following the Change in Fee Regime (2012/13)**

Despite the closing levels of upper and lower IMD quartiles, Figure 11 shows that students from poorer backgrounds (Quartiles 1 and 2) are still under-represented within NTU's student population when compared to the English population as whole. The purple line in Figure 11 represents 25 per cent of

the proportional value of each IMD quartile expected to be found in the English population. This chart shows the actual proportion of the four IMD segments represented within the NTU population. The proportion of students from Quartiles 1 and 2 in the NTU population remained fairly static following the introduction of fees. Although the proportion of students from Quartile 1 in 2013/14 at 22 per cent is moving closer to the representative population proportion (25 per cent), the proportion of students from Quartile 2 remained at around 20 per cent. At the other extreme of affluence, the students from Quartile 4 are over-represented at NTU compared with the population as a whole. Whilst acknowledging that there was a reduction in the participation of students from this group following the introduction of higher fees, it was still around 32 per cent. It is the students from Quartile 3 that showed a marked change in participation following the introduction of higher fees: within this group there was a 2 per cent decline in participation. Whilst at 25 per cent of the NTU sample population, this group perfectly reflects the proportion of the wider English population; this group saw the greatest change in population. Figure 11 shows that although the lower and upper halves of the IMD are coming closer together, the difference is still very marked.

In Document Four, the following possible explanations were offered as to why more students from less affluent backgrounds and fewer students from more affluent backgrounds enrolled at NTU in 2012/13. Firstly, more of the affluent students tried to gain a place at university in 2011/12 before the fees increased from £3,200 to up to £9,000 per year, rather than take a year out (a gap year) to travel, as they might otherwise have done. Secondly, it might be due to the 'AAB' student policy that formed part of the new funding regime: under the 'AAB' policy, universities are now able to recruit as many students as they like who achieve A-level grades of two As and a B or better, in addition to their agreed capped first-year intake. The following analysis explores this.





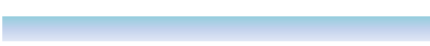
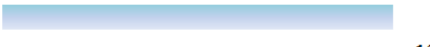
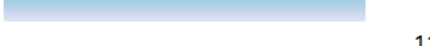

**Figure 12: Mean Average Tariff Points on Entry by IMD Quartile (2008/09 to 2013/14)**

Figure 12 suggests a number of interesting trends. The average tariff on entry to NTU for all economic backgrounds increased over the period of analysis up to and including 2013/14. This is in the context of the increased average required tariff (ART) demanded by NTU over the same period (the tariff required by NTU is further analysed later in this chapter). The analysis in Figure 12 also suggests that students from more affluent backgrounds (Quartiles 3 and 4) enrolling at NTU have a higher level of tariff points than those from less affluent backgrounds (Quartiles 1 and 2).

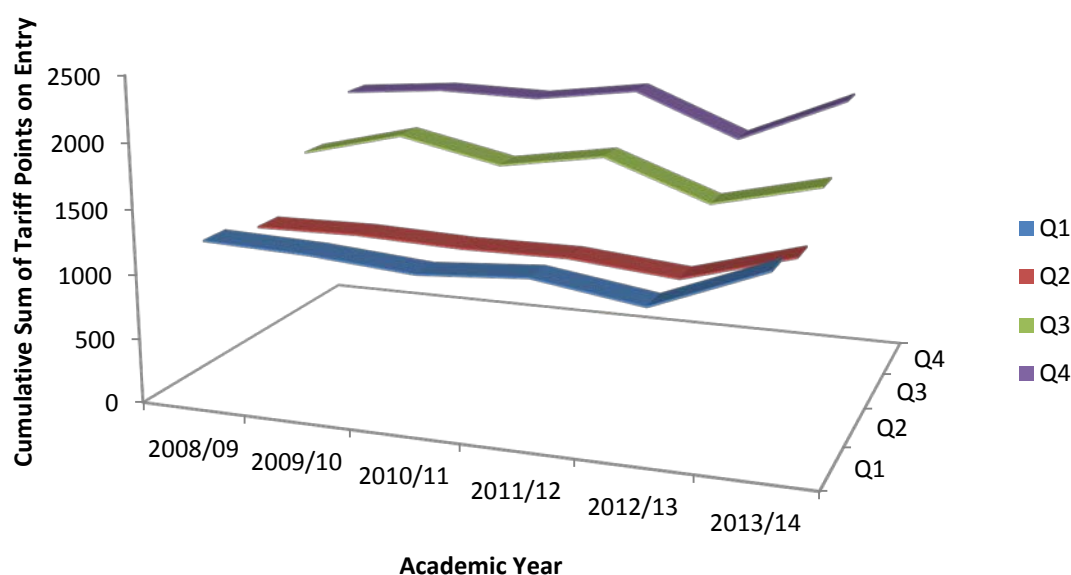
Students from less affluent backgrounds are failing to achieve the same level of average points as their more affluent fellow students, and those from Quartile 1 are not achieving the mean ART for courses offered by NTU by the largest margin of all the IMD groups. This latter fact may be due to interventions made by NTU itself in order to ensure that there are a sufficient number of students on all its courses. It is interesting to note, however, that students from the most affluent households (Quartile 4) did not always achieve the highest number of tariff points over the period of study; instead, students from the second most affluent group (Quartile 3) achieved either better (in 2009/10 and 2010/11) or very close (in 2008/09) to those from Quartile 4.

It would appear from the data shown in Figures 11 and 12 that the generally more able, more affluent students displaced the generally less academically able students from poorer backgrounds in 2011/12, the year prior to the introduction of higher fees. The situation changed in 2012/13, the first year of higher fees, when the composition of the student population moved towards a greater proportion of poorer students enrolling at NTU (40.1 per cent) and all students achieved higher tariff points. In 2013/14 the situation changed again, with more students than ever before from poorer backgrounds enrolling at NTU (Figure 11) and the average tariff on entry declining from the prior year. In previous years, with the exception of 2012/13, only the more affluent students (Q3 and Q4) either just met or barely achieved the ART. However, in 2013/14, not one group achieved the tariff, despite the NTU mean ART increasing by 7 tariff points in that year. Table 4 provides an analysis of this change by IMD quartile.

**Table 4: Reductions in Average Tariff on Entry between 2012/13 and 2013/14**

Quartile 3		13
Quartile 4		12
Quartile 2		11
Quartile 1		6

For Quartiles 2, 3 and 4 the reduction in the mean average tariff on entry was broadly similar, between 11 and 13 points. For Quartile 1, however, the decline was approximately half that of the other quartiles. Figure 13 uses a cumulative sum (CUSUM) method to look at the change in academic attainment on entry.



**Figure 13: CUSUM of Tariff Points Achieved on Entry to NTU by IMD Quartile (2008/09 to 2013/14)**

The mean average tariff analysis shown in Figure 12 suggests that the average tariff points across all IMD quartiles increased significantly over the six academic years examined. However, the use of CUSUM in Figure 13 and Table 5 to determine the gradual change in the average tariff over the period from 2008/09 to 2013/14 suggests that the change in tariff achieved is not as marked as the analysis of average tariff achieved suggests (Table 5)

**Table 5: Analysis of the Change in Average Tariff v. CUSUM of Tariff between 2008/09 and 2013/14**

IMD Quartile	Av Tariff 2008/09	Av Tariff 2013/14	% Change	CUSUM 2008/09	CUSUM 2013/14	% Change
Quartile 1	186	235	27%	1,239	1,413	14%
Quartile 2	194	253	30%	1,140	1,287	13%
Quartile 3	213	266	25%	1,569	1,615	3%
Quartile 4	215	275	28%	1,933	2,119	10%

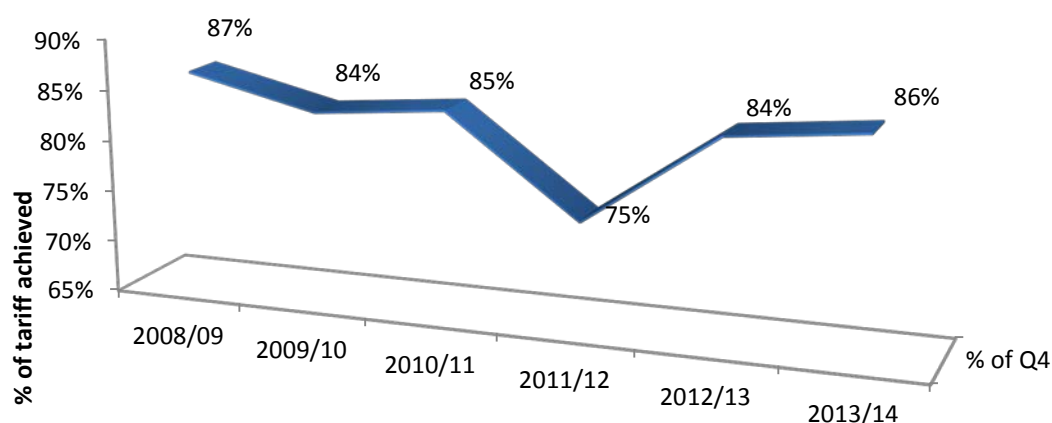
Despite the CUSUM analysis showing a lesser increase in terms of percentage change than the average tariff analysis, the trends show that in terms of the largest percentage change in tariff, both Quartile 1 and Quartile 2 have improved the most over the period under analysis (Table 6).

**Table 6: Standard Deviation of Average Tariff Points by IMD Quartile**

IMD Quartile	2008/09		2009/10		2010/11		2011/12		2012/13		2013/14	
	StdDev	Av Tariff	StdDev	Av Tariff	StdDev	Av Tariff	StdDev	Av Tariff	StdDev	Av Tariff	StdDev	Av Tariff
Quartile 1	95.70	186	98	201	109	207	103	199	77	242	72	235
Quartile 2	91.30	194	109	208	89	215	101	225	74	264	75	253
Quartile 3	84.50	213	87	245	91	250	94	259	75	278	76	266
Quartile 4	90.30	215	97	241	102	245	90	265	79	286	78	275

Table 6 shows that there is a fairly consistent, albeit large, standard deviation across all academic years and IMD quartiles. The standard deviation of average tariff points is most marked for students in Quartile 4 and less so for those students in Quartile 1, in AY2013/14.

Figure 14 provides an examination of the difference in academic tariff on enrolment at NTU between the most affluent students (Quartile 4) and the most deprived (Quartile 1). Over the six years shown above, students from the most deprived homes tended to achieve between 84 per cent and 87 per cent of the tariff achieved by their more affluent counterparts, with the exception of 2011/12, where 75 per cent was achieved.



**Figure 14: IMD Quartile 1 Average Tariff Points Achieved as a Percentage of Quartile 4 Average Tariff Points**

The analysis shown in Figure 12 and Figure 13 suggests that there is a clear relationship between the affluence of the students and their academic attainment, using the mean average tariff points on entry for each IMD quartile as a proxy. However, use of the average tariff points disguises the best-qualified

students from Quartile 1 and the least-qualified students from Quartile 4. Table 6 provides a trended standard deviation of average tariff points by IMD quartile over the past six academic years.

There have been some changes in the composition of NTU's first-year students, with those from less affluent backgrounds making up proportionally more of the population following the introduction of higher fees; these students still, however, account for less than 50 per cent of the total first-year NTU student population. This accords with the Higher Education Funding Council for England's (HEFCE) own findings of English universities, which state: 'While current evidence suggests that the reforms have not made young people from disadvantaged areas less likely to study full-time, there continue to be significant gaps in participation between different groups of students' (HEFCE, 2011).

### **Summary of points of interest**

**Hypothesis 1: In the light of increased tuition fees, there will be fewer students from the most deprived backgrounds (those students classified in IMD Quartiles 1 and 2) attending university.**

This hypothesis was rejected. On the contrary, there are now a greater proportion of students from the most deprived homes accessing NTU than prior to the introduction of higher fees. One consequence of this change in the socio-economic composition of the student population is a decline in the academic attainment on entry to NTU.

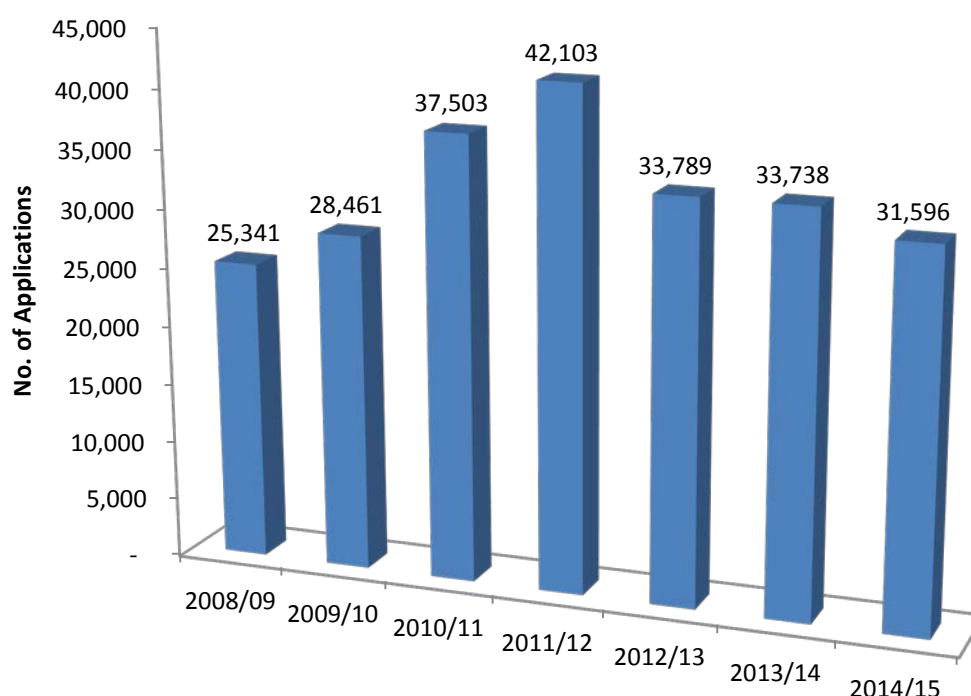
- Following the introduction of higher fees there has been an increase in participation by students from less affluent homes (Quartile 1 and Quartile 2), notably those from the most deprived homes (Quartile 1).
- Despite there still being a proportionally greater participation of students from more affluent homes, the participation of students from Quartiles 1 and 2 on aggregate has increased following the introduction of higher fees. Although the participation of students from Quartile 2 did not increase at the same rate as the participation of students from Quartile 1. The participation by students from Quartile 2 has always been less than that of students from the less affluent Quartile 1. This may be due to this group of students being too affluent to access the financial aid that poorer students from Quartile 1 can benefit from, yet not being wealthy enough to receive financial assistance from their families. Another cause may be other government initiatives such as apprenticeship schemes, which offer these students an alternative

to higher education. These schemes may be more attractive to some demographics than others, and thus provide an alternative to university for these groups of young people.

- Students from Quartiles 1 and 2 made up 42 per cent of the first-year NTU population in 2013/14, which is the highest participation rate from any group seen in the period of this study. Despite a slight increase in the participation of students from less affluent backgrounds in 2012/13, students from Quartiles 1 and 2 still did not have the same level of participation as their more affluent counterparts, and the gap remains large.
- 2013/14 saw a return to students not achieving the average required tariff points on entry, a reversal of the pattern of behaviour seen in 2012/13. All students, regardless of socio-economic background, achieved fewer tariff points on entry than the average required tariff points in 2013/14. A potential reason for this change may be that NTU have set a desirable level of points that students aim for (the ART), yet do not quite achieve; NTU will raise its expectations again in the following year as a consequence. Therefore, the change in behaviours in 2012/13 may be considered an anomaly. There has always been a relationship between the required and achieved level of A-level points, irrespective of the fee levels.
- All students enrolling at NTU in 2013/14 achieved fewer tariff points on entry than the cohort entering NTU in 2012/13, with the more affluent students seeing the largest year-on-year decrease. Despite this fall in tariff points achieved, students from Quartile 1 still achieved, on average, fewer points on entry than those from Quartile 4. This is a clear difference between the level of affluence of the students and their academic attainment on entry to NTU.

**Hypothesis 2a: In the light of increased tuition fees, there will be a change in the subjects that students apply to study at NTU: namely more students will apply for vocational courses.**

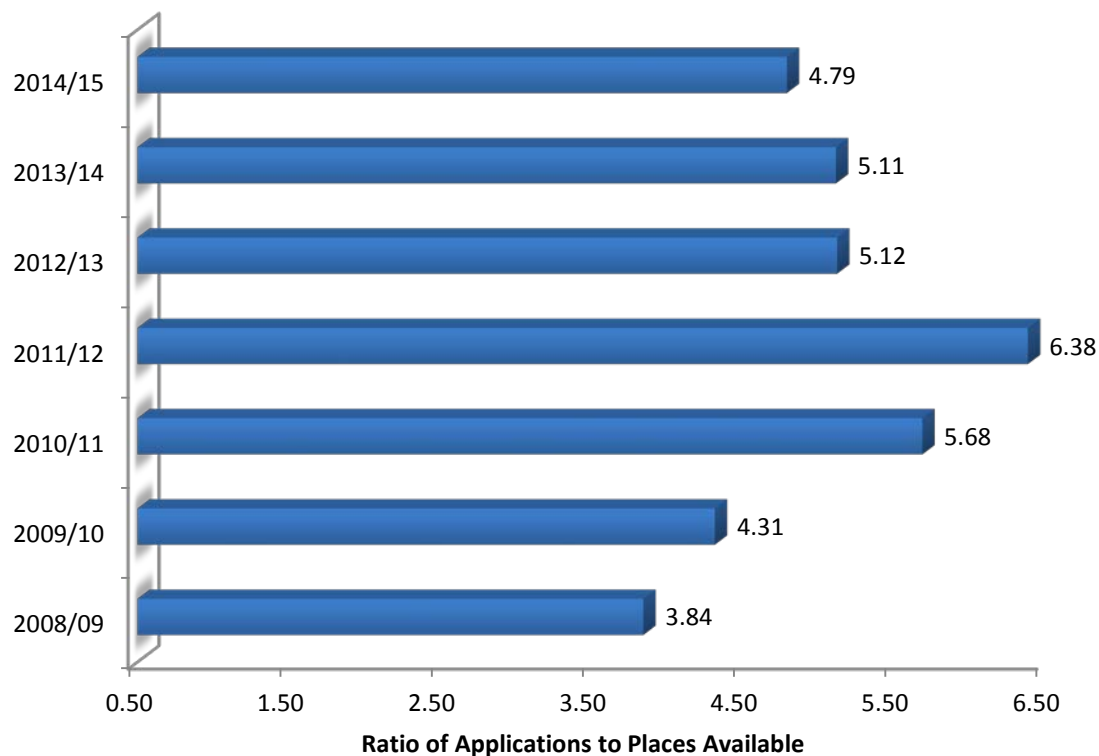
Due to the recruitment cycle of undergraduate courses it is possible to bring application data for 2014/15 into this analysis, thus providing three years of post higher fees application data. Figure 15 shows the seven-year trend in applications for NTU full-time undergraduate courses as a whole from England-based students between 2008/09 and 2014/15.



**Figure 15: Total Applications from English based Students for Full-time Undergraduate Courses at NTU (2008/09 to 2014/15)**

Up to and including 2011/12 entry, applications to NTU increased from 25,341 in 2008/09 to a peak of 42,103 in 2011/12, which would be expected due to this being the last year of lower fees. Applications for entry in 2012/13 show a sharp decline to 33,789, some 10 per cent lower than in 2010/11; this year is a more appropriate comparator year than 2011/12, when it can be assumed that some students forfeited gap years in order to avoid the higher fees. Applications to NTU for 2013/14 entries remained fairly flat against the prior year. However, applications to NTU for entry in 2014/15 declined by over 2,142 or 2 per cent against the prior year (Figure 15).

Typically, each year NTU has around 6,500 first-year UK/European Union (EU) undergraduate places available across its portfolio. So while having applications in excess of 31,000 would suggest that there is an excess of demand over the supply of places, each student that has applied to NTU has potentially applied to up to five other universities as well. Figure 16 illustrates the change in applications to places available ratio.



**Figure 16: Seven-year Trend of Applications to Places Available Ratio**

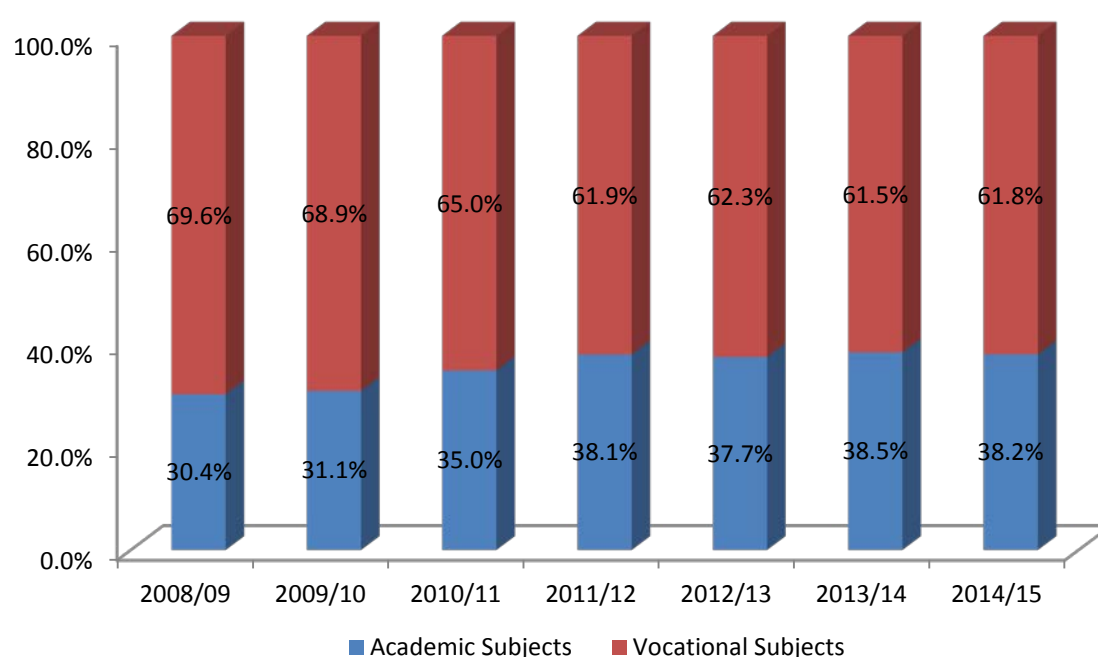
According to the application data shown in Figure 16, 2008/09 had the lowest ratio of applications to places available at 3.84. As the years progressed, the ratio of applications to places available increased to a peak of 6.38 in 2011/12. When higher fees were introduced, the ratio decreased to 4.79 applications per place available.

The evidence shown in Figures 15 and 16 suggests that following the introduction of higher fees there was a reduction in the number of applications to NTU. But has there been any change to the pattern of applications by subject, notably a change towards more students applying for vocational courses?



When considering whether more students are applying for vocational courses than before, it is important to understand their definition. Whilst most people know what a vocational course is, there is no precise definition of what constitutes a 'vocational' subject, despite the best efforts of official agencies with responsibility for higher education (namely HEFCE and HESA) to provide a clear classification for such subjects. A further consideration is that NTU has a reputation for offering 'vocational courses'. However, due to most, if not all, courses at NTU offering students the opportunity to undertake vocational elements such as industrial placements as part of their course of study, regardless of subject discipline, it is challenging to define particular subjects as being 'vocational' or 'non-vocational' courses. In order to overcome this definitional issue to some extent, Appendix 1 attempts to classify NTU's courses into those that are implicitly 'vocational' and those that are considered traditional academic.

Over the seven-year period trended in Figure 17, it can be seen that applications for vocational courses constitute approximately two-thirds of the applications to NTU. Examining applicant behaviour following the introduction of higher fees in 2012/13 shows that applications for vocational subjects remained broadly in line with those received in 2011/12, the year before the higher fees.



**Figure 17: Seven-year Trend in Applications by Subject Type**

So whilst there was a decrease in the overall applications to study at NTU following the introduction of higher fees in 2012/13, there was no marked change to students applying for vocational/academic

subjects. What is noteworthy, however, is the reduction in the proportion of applications for vocational courses from 2008/09 (69.6 per cent) to 2011/12 (61.9 per cent).

**Hypothesis 2b: Students from the most affluent backgrounds (those classified in IMD Quartile 4) will be more likely than their less affluent counterparts to enrol on academic subjects.**

The literature strongly suggests that there is a relationship between the socio-economic group of the students and subject choice, with students from less affluent backgrounds choosing more vocational courses than more affluent students. The data will be tested using two different classifications of subjects. The first test will use the Joint Academic Coding System (JACS) to determine whether there is a relationship between the IMD quartile of the students and their subject choice. JACS is a classification system in use across the UK higher education system owned by HESA, in which subjects are grouped into nineteen subject areas and given a code. It is these codes that are used by HESA and other agencies when reporting student information, as they provide a useful broad-brush picture. JACS codes are widely known and understood in the context of the British higher education, and are therefore suitable for use in this research.

The second test will use the same classification as Van de Werfhorst *et al.* (2003), who suggested that there is an alignment between the subject choice of a student and the social and economic position of their parents, to determine whether there is any relationship between the socio-economic background of students and their choice of subject studied at university.

Multinomial logistical regression, a classification method that applies a logistical regression to problems that have more than two outcomes, has been used to understand the likeliness of students to choose a subject depending on the socio-economic group to which they belong (their IMD quartile, in this case). The referent group in this test is Quartile 4, the most affluent group, against which the multinomial logistic regression predicts the relative likelihood of students from Quartiles 1 to 3 choosing a subject, compared with students from the most affluent homes, Quartile 4. Quartile 4 has been selected as the referent group as it is this group of students that proportionally makes up most of the student population.

**Table 7: Multinomial Logistic Regression Model of JACS Code Subject Choice by IMD Quartile  
(Using IMD Quartile 4 as the Referent Group)**

	Quartile 4 v. Quartile 1		Quartile 4 v. Quartile 2		Quartile 4 v. Quartile 3	
Subject Grouping (JACS Code)	Relative likelihood	Standard Error	Relative likelihood	Standard Error	Relative likelihood	Standard Error
Agriculture & Related Subjects	0.140	1.050	0.166	0.108	0.259	0.097
Architecture, Building & Planning	-1.700	0.075	-0.152	0.078	-0.3	0.069
Biological Sciences	0.830	0.062	0.034	0.065	-0.022	0.061
Business & Administrative Studies	-0.820	0.061	-0.12	0.064	-0.094	0.059
Creative Arts & Design	-0.386	0.059	-0.147	0.606	0.046	0.055
Education	0.100	0.072	0.076	0.074	-0.06	0.070
Engineering & Technology	0.176	0.080	0.118	0.084	-0.04	0.079
Humanities	-0.300	0.078	0.027	0.080	0.006	0.074
Languages	-0.920	0.090	0.024	0.091	0.025	0.084
Law	0.416	0.066	0.072	0.073	-0.27	0.069
Librarianship & Information Science	-0.162	0.090	-0.007	0.090	0.025	0.082
Mathematical Sciences	0.213	0.119	0.064	0.127	0.092	0.115
Physical Sciences	-0.700	0.100	0.710	0.100	-0.028	0.093
Social, Economic & Political Studies	0.435	0.159	0.212	0.120	0.055	0.113

The literature suggests that there is a clear demarcation of subject choice along socio-economic lines, with more affluent students choosing more academic subjects. The findings in Document Four also suggested, following a very simple analysis of subject choice by IMD quartile from 2008/09 to 2012/13, that there is a split between science-based subjects and social science-based subjects according to socio-economic backgrounds, with less affluent students choosing to study science subjects. The evidence presented in Table 7 suggests the following:

*Quartile 1 subject choice relative to Quartile 4:* Students from the most deprived homes (Quartile 1) are relatively more likely than students from the most affluent homes (Quartile 4) to choose subjects within the JACS codes of Biological Sciences; Law; Social, Economic and Political Studies; Mathematical Sciences; Engineering and Technology; Agriculture and Related Subjects; and Education.

*Quartile 2 subject choice relative to Quartile 4:* Students from the second most deprived homes (Quartile 2) are relatively more likely than students from the most affluent homes (Quartile 4) to choose subjects within the JACS codes of Physical Sciences; Social, Political and Economic Studies; Agriculture and Related Subjects; and Engineering and Technology.

*Quartile 3 subject choice relative to Quartile 4:* Students from the second most affluent homes (Quartile 3) are relatively more likely than students from the most affluent homes (Quartile 4) to choose subjects within the JACS code of Agriculture and Related Subjects; the differences between the upper two quartiles are clearly less marked here.

Using Van de Werfhorst *et al.*'s (2003) classification of degree subject is another approach for testing the hypothesis that there is a relationship between the socio-economic background of students and the choice of subject they study at university. In their study, Van de Werfhorst *et al.* (2003) classified subject disciplines into six broad categories:

1. Medicine and Law (prestigious professional degrees)
2. Engineering (including Technology, Computing and Agriculture)
3. Science (including Mathematics and Life Sciences)
4. Economics (comprising subjects that are strongly associated with the acquisition of economic, financial and business-oriented knowledge and skills)
5. Social Studies (Social Sciences, Social Work, Education)
6. Arts (including Humanities)

With the exception of Medicine, NTU offers subjects within all the categories noted above. Table 8 shows a multinomial logistic regression model of the choice of degree subject by IMD quartile according to Van de Werfhorst *et al.*'s (2003) classification of degree subject from 2008/09 to 2013/14.

**Table 8: Multinomial Logistic Regression Model of Subject Choice by IMD Quartile (Using IMD Quartile 4 as the Referent Group)**

	Quartile 4 v. Quartile 1		Quartile 4 v. Quartile 2		Quartile 4 v. Quartile 3	
Subject	Relative likelihood	Standard Error	Relative likelihood	Standard Error	Relative likelihood	Standard Error
Arts	-0.257	0.047	-0.76	0.047	0.03	0.044
Economics	-0.05	0.053	-0.09	0.055	-0.081	0.051
Engineering	0.009	0.055	0.001	0.056	0.028	0.052
Law	0.418	0.061	0.073	0.067	-0.032	0.063
Science	0.072	0.052	0.045	0.540	-0.015	0.050
Social Studies	0.276	0.000	0.163	0.000	-0.002	0.000

*Quartile 1 subject choice relative to Quartile 4:* Students from the most deprived homes (Quartile 1) are relatively more likely than students from the most affluent homes (Quartile 4) to choose subjects within Law and Social Studies.

*Quartile 2 subject choice relative to Quartile 4:* Students from the second most deprived homes (Quartile 2) are relatively more likely than students from the most affluent homes (Quartile 4) to choose subjects within Social Studies.

*Quartile 3 subject choice relative to Quartile 4:* Students from the second most affluent homes (Quartile 3) are relatively less likely than students from the most affluent homes (Quartile 4) to choose subjects within Economics; again, the differences between the upper two quartiles are less marked.

This analysis of subject choice using Van de Werfhorst *et al.*'s (2003) classification of degree subject shows that students from less affluent backgrounds are more likely to choose subjects in the Social Studies and Law groups, despite Law being noted by Van de Werfhorst *et al.* (2003) as a 'prestigious' subject. Students from the most affluent homes are more likely to choose subjects in the Arts and Economics groups.

### Summary of points of interest

*Hypothesis 2a:* In the light of increased tuition fees, there will be a change in the subjects that students apply to study at NTU: namely more students will apply for vocational courses.

This hypothesis was rejected. There has been no major change at all in students applying to courses that may be considered vocational following the introduction of higher fees. However:

- There are real challenges in defining ‘vocational’ subjects in general, which is further exacerbated in this particular case study, as all subject disciplines at NTU include vocational content.
- Despite an overall fall in the number of applications to NTU following the introduction of higher fees in 2012/13, there has been no marked change in application behaviour following the introduction of fees. Applications for subjects considered vocational remain at between 61.5 per cent and 62.3 per cent of the total applications to NTU in the three years following the introduction of higher fees, the same proportion of applications as in 2011/12 (61.9 per cent). A note of concern in this study, however, is the significant decline in applications for vocational subjects from 69.6 per cent in 2008/19 to 31.9 per cent in 2010/12.

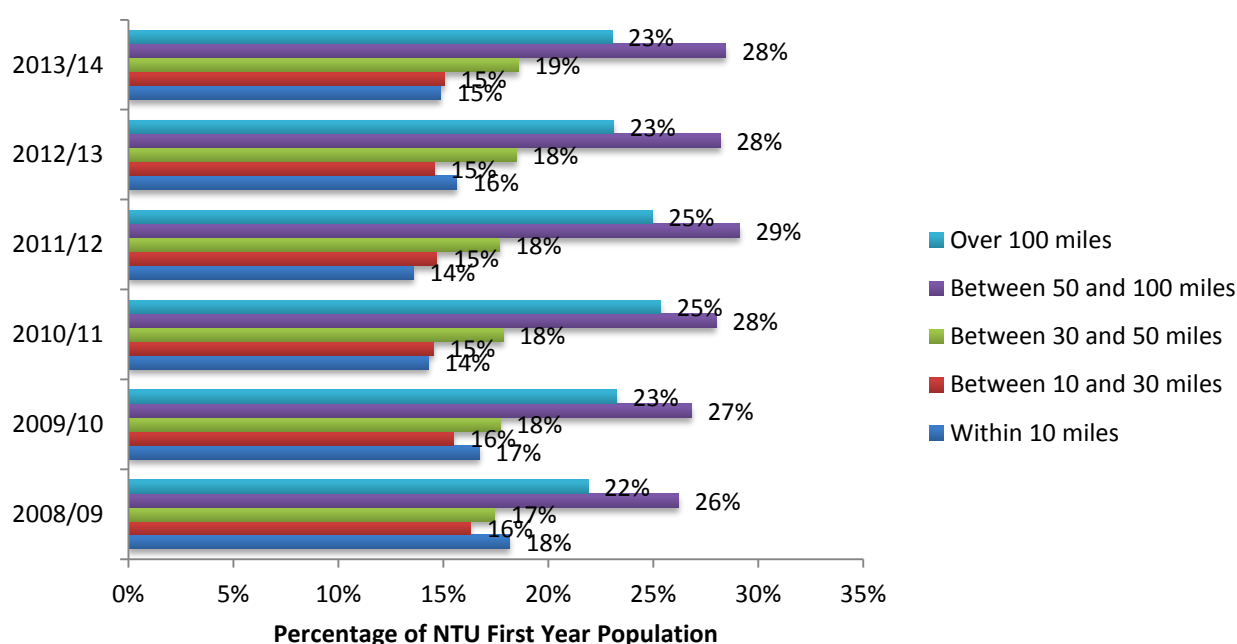
**Hypothesis 2b: Students from the most affluent backgrounds (those classified in IMD Quartile 4) will be more likely than their less affluent counterparts to enrol on academic subjects.**

This hypothesis could not be rejected. The following observations were made:

- There is a relationship between socio-economic background and subject choice. Using the JACS classification it can be seen that students from the most deprived backgrounds (Quartiles 1 and 2) are relatively more likely than those from the most affluent background to choose subjects in the following groups: Social, Political and Economic Studies; Education; Mathematical Sciences; Biological Sciences; and Engineering and Technology.
- Using a second classification to group subjects suggests that poorer students are relatively more likely to choose subjects in Social Studies and Law. This triangulates the results of the relatively higher likelihood that students from less affluent backgrounds will choose to study certain subjects compared with their more affluent counterparts.

**Hypothesis 3a: Facing substantially higher fees, the mean distance travelled by students from the most deprived backgrounds (those classified in IMD Quartile 1) between home and university will be less than under previous regimes.**

Figure 18 shows the distance between the home postcode recorded by students at the time of enrolment and the NTU campus at which they are undertaking their studies (City, Clifton or Brackenhurst). Most students (an average of 28 per cent over the period of this study) travelled between 50 and 100 miles from their home address to study at NTU. This figure has remained fairly static since the introduction of fees in 2012/13.

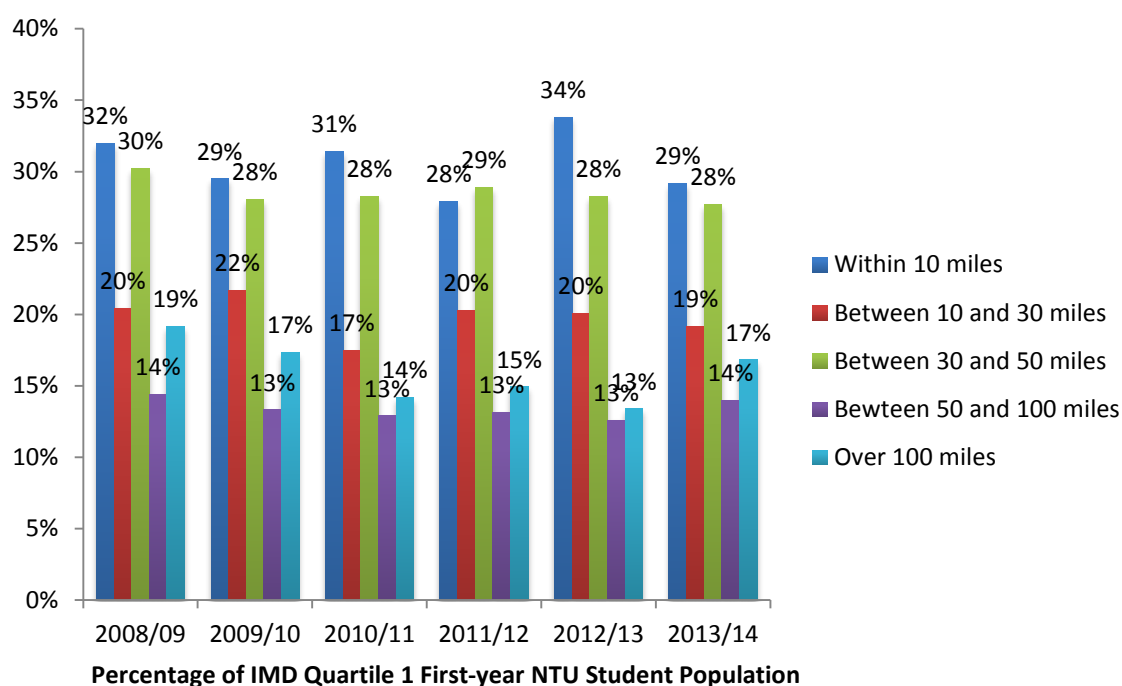


**Figure 18: Distances between Home Postcode Area and Campus of Study**

There was only limited change in the distances travelled by students to undertake their studies at one of NTU's campuses over the six years analysed in Figure 18. In 2008/09, 18 per cent of students travelled no more than ten miles from their home address; this declined to 14 per cent in 2011/12 then increased to 15 per cent in the two years following the introduction of higher fees. In contrast, 22 per cent of students travelled over 100 miles from their home address in 2008/09; this increased to 29 per cent in 2011/12 (the last year before higher fees applied) and then declined to 23 per cent in 2013/14.

A point of consideration is that if students are travelling less than ten miles from their home postcode to the campus of study this does not necessarily mean that they are living in the family home, as they may have left home to move closer to NTU prior to enrolment.

An examination of the distance travelled between home postcode area and campus of study by the most deprived students (Quartile 1) from 2008/09 to 2013/14 (Figure 19) suggests that there has not been a particular overall change in the percentage of students travelling less than ten miles. Until the increase in fees in 2012/13, students from the most deprived backgrounds made up between 28 per cent and 32 per cent of the students who travelled less than ten miles from their home postcode area to their campus of study. However, there was a marked change in the percentage (an increase of 6 per cent) of these students travelling less than ten miles to their campus of study in 2012/13, the first year of increased tuition fees. This change did not continue into 2013/14, when this percentage of students reverted back to its pre-2012/13 level.

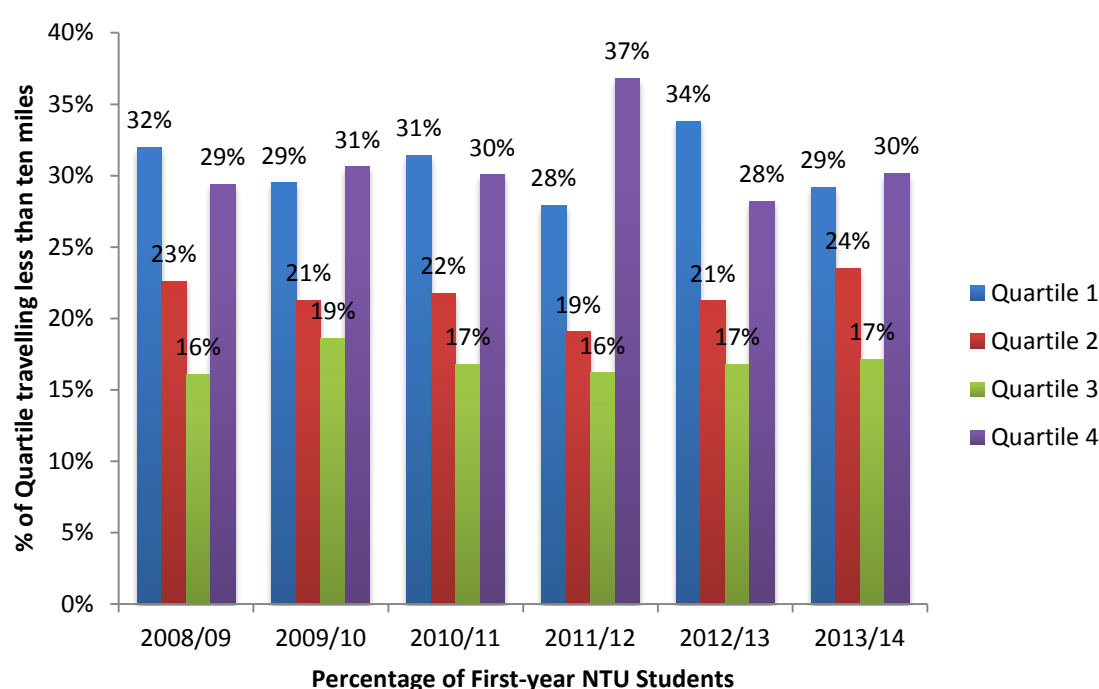


**Figure 19: Distance Travelled by Students from IMD Quartile 1 between Home Postcode Area and NTU Campus of Study**

Figure 20 depicts the socio-economic background of all students who travelled less than ten miles from their home postcode area to their campus of study between 2008/09 and 2013/14. It can be seen that 32 per cent of this population were from IMD Quartile 1 (the most deprived) and 29 per cent



were from IMD Quartile 4 (the most affluent) in 2008/09. The socio-economic background of the student population remained fairly static until the year prior to the introduction of higher fees, 2011/12. In this year there was a notable increase in students from Quartile 4 travelling less than ten miles, an increase of 7 per cent from the year before to 37 per cent. Following the introduction of fees in 2012/13, the percentage of students travelling less than ten miles to their campus of study returned to the pre-higher tuition fee rate. What is of interest is the trend of Quartiles 2 and 3: throughout the six years of data shown in Figure 19, there was no real change to the percentages of these students travelling less than ten miles.



**Figure 20: The Percentage of Students from Each IMD Quartile Travelling Less Than Ten Miles from Home Postcode Area to Campus of Study (2008/09–2013/14)**

It can be seen in Figures 19 and 20, that whilst students from Quartile 1 account for between 31 per cent and 32 per cent of the students who travelled less than ten miles between their home postcode area and campus of study, this is not a particularly high percentage. Quartile 1 students were also consistently slightly over-represented (30 per cent) in the group that travelled between 30 and 50 miles. What is of particular interest is the low representation of Quartile 1 students in the distance category of between 10 and 30 miles. One explanation for this could be the high representation of universities in the region offering alternative places to study, some of which will be nearer to these

students' homes and thus more convenient for them. It would appear that there was no substantial change in the distance travelled by students of lower socio-economic groups in the two years following the introduction of higher fees in 2012/13.

**Hypothesis 3b: In the light of increased fees there is a positive relationship between the academic tariff on entry to university and the distance between the student's home and the place of study at NTU.**

The findings summarised in Table 9 suggest that there is a relationship between the distance between students' home postcode area and campus of study and their academic attainment on entry to NTU.

**Table 9: Students' Average Tariff on Entry to NTU according to the Distance between Their Home Postcode Area and Campus of Study**

	Academic Year						Mean Average
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	
Within 10 miles	154	190	164	159	201	201	178
Between 10 and 30 miles	198	220	208	205	251	244	221
Between 30 and 50 miles	222	232	246	251	284	267	250
Between 50 and 100 miles	224	245	259	270	303	285	264
Over 100 miles	212	239	249	273	281	269	254

Notably, throughout the six years of data studies, it is largely true that the further the students travelled from home to study, the higher their average tariff on entry was. However, this relationship between distance and academic attainment only applies up to a distance of 100 miles. For students

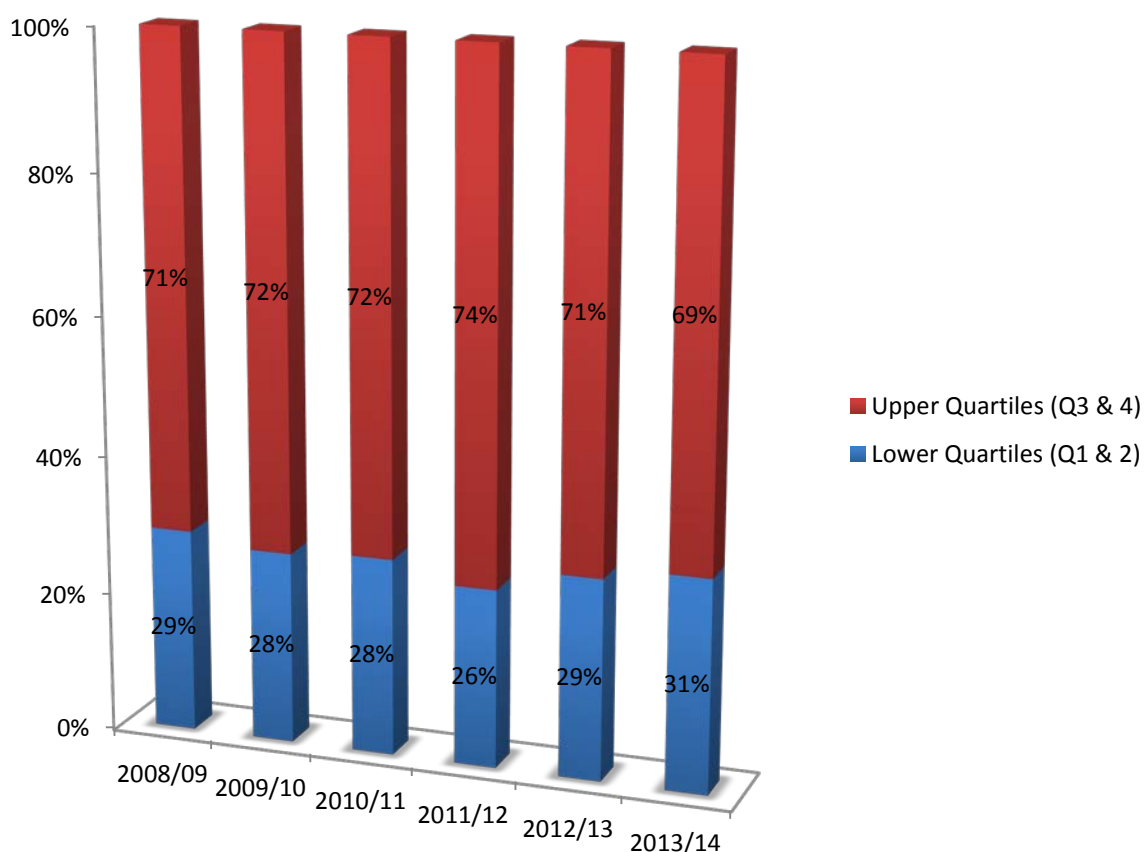
who travelled over 100 miles, their attainment was closer to those who travelled between 30 and 50 miles, with the exception of 2011/12 when they were the highest achieving group. Of note, and consistent with the findings earlier in this chapter, is that there was a decline in the average tariff achieved in 2013/14 compared to 2012/13 across all distance categories except for those students travelling less than ten miles.

The evidence in Table 9 would suggest that high-achieving students were not attending NTU just because it was closer to their homes, and they could therefore avoid paying accommodation costs. However, NTU is one of a number of universities in the East Midlands; according to the Complete University Guide (Complete University Guide, 2013) there are nine universities in the region. In addition, NTU also shares a city with the University of Nottingham (a member of the Russell Group of universities). As such, in the case of Nottingham as a city, high-achieving local students who are price sensitive can stay at home in order to minimise costs and still attend an 'elite institution': the University of Nottingham.

Another explanation for this distance travelled and academic attainment relationship may be due to the widening participation activities undertaken by NTU: 'Widening participation is the drive to increase the proportion of learners who progress to higher education from under-represented groups, particularly those from lower socio-economic groups' (Nottingham Trent University, 2013b). The main focus of such activities for the last ten years has been in the city of Nottingham (Nottingham Trent University, 2013b). The aim of widening participation is to open up the idea of attending university to students who would not normally access higher education, rather than to act as a recruitment activity. An unintended consequence (although some commentators such as McCaig (2009) suggest it is an intended consequence) is that young people who come into contact with a university through widening participation activities sometimes do, in fact, enrol at that same institution. If the widening participation activities of NTU were creating a situation whereby students from lower socio-economic groups within the locality were enrolling at NTU, then it would be expected to see a disproportionate percentage of students from IMD Quartile 1 travelling distances of less than ten miles. Figure 20 suggests that widening participation activities have not had a particularly large impact in this regard.

An examination of the socio-economic composition of the distance groupings may provide an explanation of the relationship between distance travelled and academic tariff on entry. Using the highest achieving distance group, 'between 50 and 100 miles', Figure 19 indicates that only 14 per cent of students from IMD Quartile 1 travelled between 50 and 100 miles from their home to their

campus of study in 2013/14. Figure 12 also shows that this same group of students, Quartile 1, consistently achieved the lowest academic attainment on entry to NTU. Figure 21 analyses the population of the distance grouping against IMD quartiles



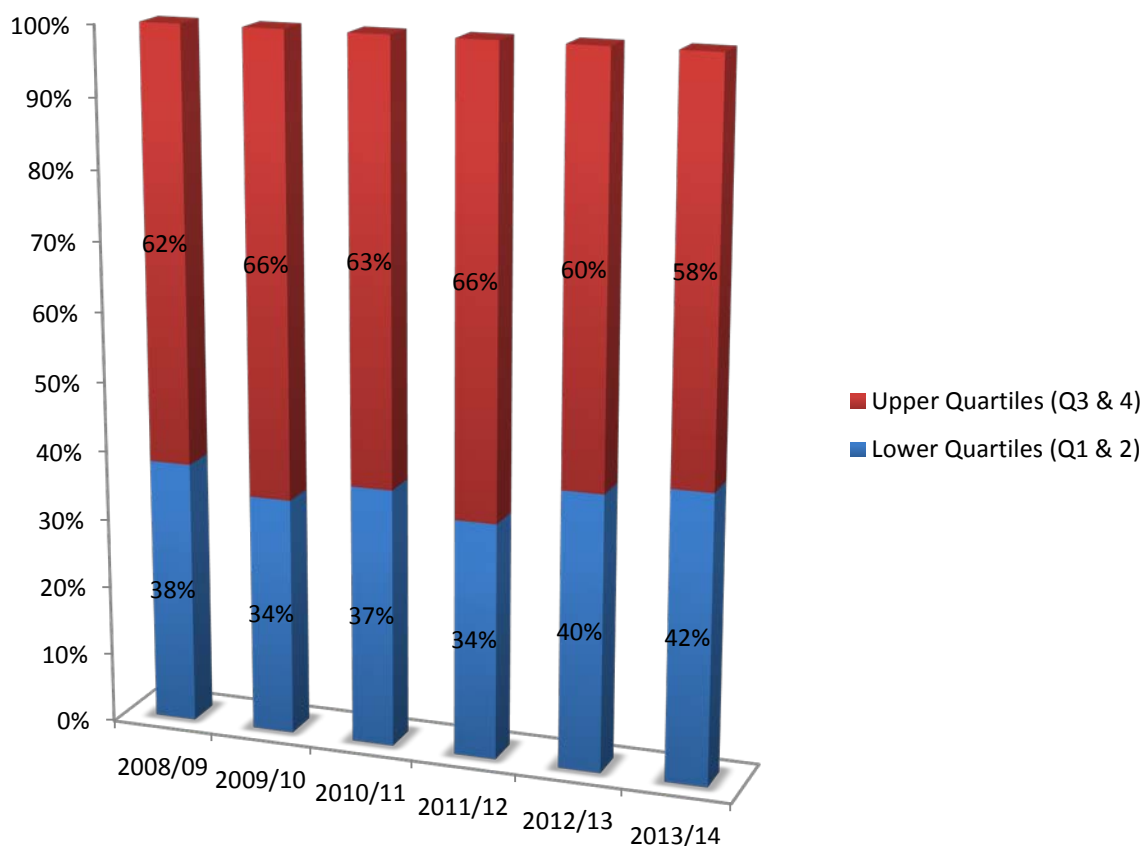
**Figure 21: Students Travelling between 50 and 100 Miles from Their Home Postcode Area to Their Campus of Study according to IMD Quartiles**

Between 69 per cent and 74 per cent of the students travelling this distance category came from the most affluent homes (Quartiles 3 and 4). In the last intake year before higher fees, 2011/13, the percentage of affluent students travelling this distance increased from 72 per cent to 74 per cent. Following the introduction of higher fees this proportion declined to 71 per cent in 2012/13 and 69 per cent in 2013/14, consistent with a slight decline in the percentage of more affluent students enrolling at NTU overall during the same period.

Does this pattern of recruitment provide an explanation for the difference in academic attainment between students travelling between 50 and 100 miles and those travelling over 100 miles? Figure 19

indicates that 17 per cent of students from IMD Quartile 1 travelled over 100 miles from their home to their campus of study in 2013/14. Prior to this year, students from IMD Quartile 1 typically made up between 13 per cent and 19 per cent of the total student population travelling over 100 miles.

Figure 22 shows that students from the more affluent homes make up between 58 per cent and 66 per cent of those who travel over 100 miles from their home to their campus of study, making up a lesser proportion of the population than in the distance category of 'between 50 and 100 miles'.

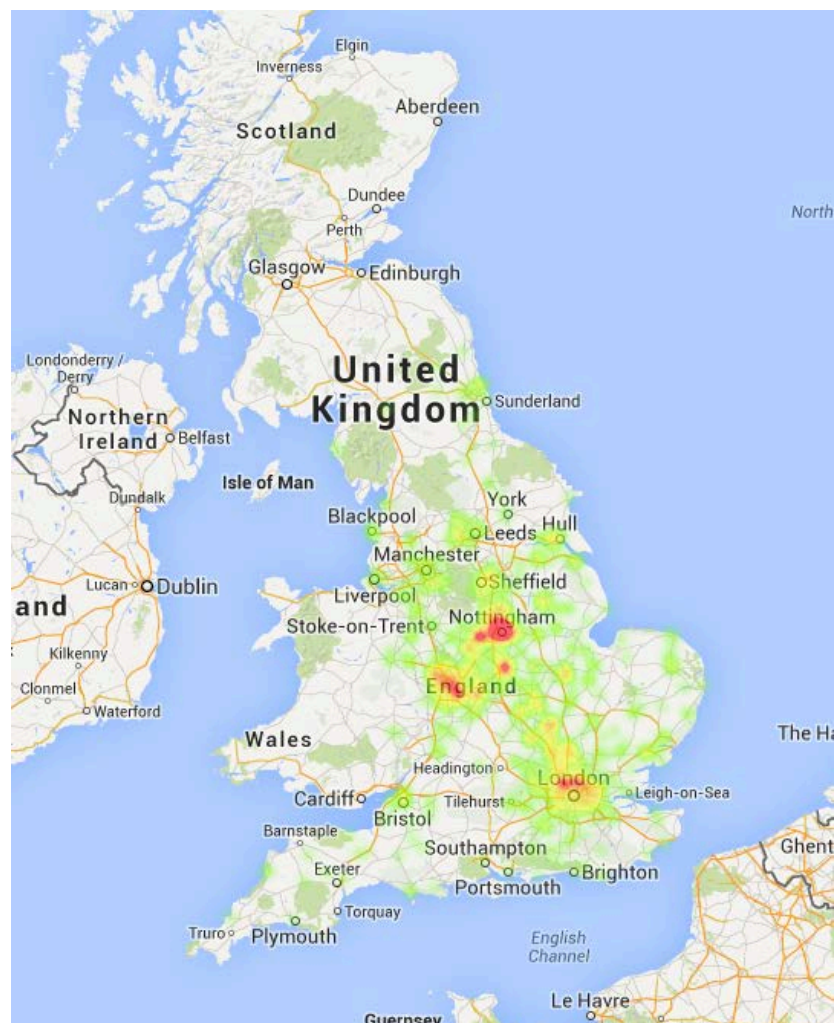


**Figure 22: Students Travelling Over 100 Miles between Their Home Postcode Area and Their Campus of Study according to IMD Quartiles**

Similar to the emerging trend seen in this latter distance category, in 2011/12, the last intake before higher fees, the percentage of affluent students travelling over 100 miles was 66 per cent; following the introduction of higher fees, this proportion declined to 60 per cent in 2012/13 and 58 per cent in 2013/14, again consistent with a slight decline in the percentage of more affluent students enrolling at NTU overall during the same period.

**Hypothesis 3c: Following the introduction of higher fees, students from the local area are more likely to enrol on a vocational subject at NTU.**

Figure 23, using a heat map, graphically illustrates where the first-year NTU sample population in 2013/14 came from.



Most counts of Students' Home Post code ■ ■ ■ ■ ■ Least Counts of Students' Home Postcode

**Figure 23: First-year NTU Student Population by Location (2013/14)**

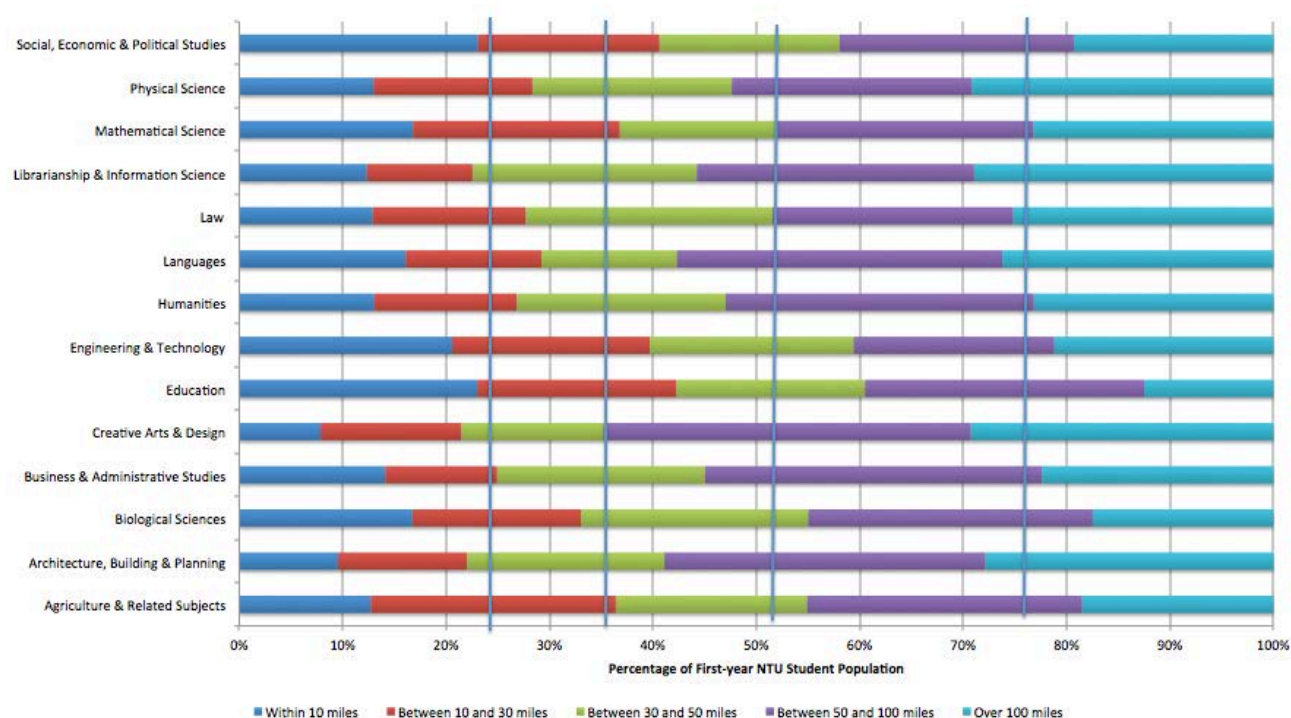
NTU is a university that recruits 'regionally' (that is, within the East Midlands Regional Administrative Boundary), with over one-third of its students across the period of study coming from the East Midlands (Table 10). According to the Boundary Commission for England (2013), the East Midlands region comprises of the counties of Derbyshire, Leicestershire, Lincolnshire, Northamptonshire and Nottinghamshire.

**Table 10: First-year NTU Student Population by Region (2008/09 to 2013/14)**

Region	Academic Year					
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
East Midlands	37%	35%	32%	32%	33%	34%
West Midlands	17%	16%	17%	16%	16%	17%
East of England	13%	13%	14%	14%	14%	15%
London	9%	10%	10%	11%	10%	11%
South East	8%	8%	9%	8%	8%	8%
Yorkshire and The Humber	5%	7%	8%	7%	7%	6%
North West	6%	6%	6%	6%	7%	6%
South West	3%	4%	3%	4%	3%	3%
North East	2%	2%	2%	2%	2%	1%

This pattern of regional recruitment accords with the data in Figure 22, which shows that between 29 per cent and 34 per cent of students' home postcode areas were within 30 miles of their campus of study. Over the six years of data included in this study there was no marked variation from where students were recruited.

Despite the large proportion of students being recruited regionally, as indicated in Table 10, some subjects may have a wider reach with regard to the distance that students will travel to study that particular subject. The data illustrated in Figure 24 suggests that a number of subjects recruit on a geographical basis differently to the NTU sample population.



Distance	Within 10 miles	Between 10 and 30 miles	Between 30 and 50 miles	Between 50 and 100 miles	Over 100 miles
NTU Average	15%	15%	19%	28%	23%

**Figure 24: Enrolments by Subject according to JACS Code, Analysed by Distance from Home Postcode Area to Campus of Study (2013/14)**

In testing *Hypothesis 3b: In the light of increased fees there is a positive relationship between the academic tariff on entry to university and the distance between the student's home and the place of study at NTU*, an emergent trend was that at NTU there are sometimes different demographics of students according to the distance between the student's home postcode area and campus of study. In testing *Hypotheses 2a: In the light of increased tuition fees, there will be a change in the subjects that students apply to study at NTU: namely, more students will apply for vocational courses*, it was proven that students were relatively more likely to choose certain subjects to study depending on the IMD quartile to which they belonged. In order to triangulate other findings in this section and to provide business intelligence for use beyond this document, not only will the recruitment patterns of subject groups be examined, but the socio-economic background of students studying particular subjects will also be analysed in terms of their IMD quartile and their average tariff on entry, in order to discover and understand any interdependencies.



### *Subjects That Recruit on a Local Basis (within 10 miles)*

Table 11 shows that there are three subject groups (Education; Engineering and Technology; and Social, Economic and Political Studies) that recruit on a more local basis than the NTU average recruitment pattern, which is that 15 per cent of students have a home postcode area less than ten miles from the campus of study.

**Table 11: Subjects That Recruit on a Local Basis (2013/14)**

Subject Grouping	Recruitment in Distance Category	Difference to NTU Norm (15%)	Average Tariff on Entry (2013/14)	Difference to NTU Average (260 points)	Students from Most deprived Homes (Q1 & Q2)	Difference to NTU Population (42%)
Education	23%	+8%	249	-11	44%	+2%
Engineering & Technology	21%	+6%	241	-19	46%	+4%
Social, Economic & Political Studies	23%	+8%	204	-56	51%	+8%

Both Social, Economic and Political Studies and Education recruited 23 per cent of their students from within ten miles of the NTU campus of study, compared with 15 per cent for the first-year NTU student population as a whole. Engineering and Technology recruited 21 per cent of its students locally. The academic attainment on entry across all three subject groups was below that of the NTU average, with the Social, Economic and Political Studies average tariff on entry being the lowest at 204 points, some 56 points less than the NTU average. For the Engineering and Technology and the Education subject groups, there was no marked difference in the percentage of students coming from less affluent homes compared with the first-year NTU student population as a whole. However, the student socio-economic background of the Social, Economic and Political Studies subject group consisted of over 50 per cent of students coming from the most deprived homes.

### *Subjects That Recruit on a Regional Basis (between 10 and 50 miles)*

Table 12 shows that there are three subject groups that recruit on a more regional basis than the NTU average recruitment pattern: Agriculture and Related Subjects, Biological Sciences and Law.

**Table 12: Subjects That Recruit on a Regional Basis (2013/14)**

Subject Grouping	Recruitment in Distance Category	Difference to NTU Norm (34%)	Average Tariff on Entry (2013/14)	Difference to NTU Average (260 points)	Students from Most deprived Homes (Q1&Q2)	Difference to NTU Population (42%)
Agriculture & Related Subjects	42%	+8%	244	-16	42%	-
Biological Sciences	38%	+4%	268	8	42%	-
Law	38%	+4%	253	-7	52%	+10%

It can be seen that Biological Sciences and Law recruited 38 per cent of their students from within ten miles of the NTU campus of study, compared with 34 per cent for the first-year NTU student population as a whole. Agriculture and Related Subjects recruited even more of its student regionally, with 42 per cent of students coming between 10 and 50 miles to study at an NTU campus. Unlike the subject groups that recruited locally, there was no consistent pattern of behaviours with regard to academic attainment across the three subjects groups that recruited regionally. In 2013/14 both Law and Agriculture and Related Subjects had an average tariff on entry of 244 and 253 points respectively, both less than the NTU average; Biological Sciences, however, had an average tariff on entry of 268 points, just 8 points higher than the NTU average.

With the exception of Law, there was no variation between the socio-economic composition of the student population in the subject groups recruiting on a regional basis compared with the NTU sample population as a whole. In the case of Law, however, over 50 per cent of the students it recruited regionally came from less affluent areas.

#### *Subjects that recruit nationally (Over 50 Miles)*

Table 13 shows that there are five subject groups that recruit on a more national basis than the NTU average recruitment pattern: Architecture, Building and Planning, Business and Administrative Studies, Creative Arts and Design, Languages, and Librarianship and Information Science.

**Table 13: Subjects That Recruit on a National Basis (2013/14)**

Subject Grouping	Recruitment in Distance Category	Difference to NTU Norm (51%)	Average Tariff on Entry (2013/14)	Difference to NTU Average (260 points)	Students from Most deprived Homes (Q1&Q2)	Difference to NTU Population (42%)
Architecture, Building & Planning	59%	+8%	232	-28	34%	-8%
Business & Administrative Studies	55%	+4%	285	25	40%	-2%
Creative Arts & Design	65%	+14%	299	39	35%	-7%
Languages	58%	+7%	223	-37	44%	+2%
Librarianship & Information Science	56%	+5%	279	19	42%	-

All of the subject groups noted in Table 13 recruited over 55 per cent of their students on a national basis in 2013/14, compared with 51 per cent of the total NTU sample population. The Creative Arts and Design subject group recruited 65 per cent of its students nationally and just 8 per cent on a local basis. The average tariff on entry for this same subject group was 299 points in 2013/14, some 39 points higher than the NTU average. Albeit on a lesser scale, both the Business and Administrative Studies and the Librarianship and Information Science groups followed a similar pattern of recruitment behaviour to the Creative Arts and Design group in that the students were recruited on a more national basis and achieved a higher average tariff on entry compared with the NTU average. In terms of the socio-economic background of these three subjects groups, the students were more than or as affluent as the NTU sample population.

The subject groups of Languages and of Architecture, Building and Planning showed different recruitment patterns to the other subject groups that recruited nationally. For Architecture, Building and Planning, despite recruiting a greater proportion of students from more affluent homes, the average tariff on entry was 28 points less than the NTU average in 2013/14. Languages did not have any commonality with the other subject groups that recruited nationally; the average tariff on entry was 37 points lower than the NTU average and the percentage of students from the most deprived homes was 2 per cent higher than the NTU average.

At the subject group level, there were some changes to geographical recruitment patterns over the six years of the study data. Table 14 provides a summary of how subjects recruited geographically over the period of the study.

**Table 14: Summary of Subject Recruitment by Geography**

	2008/09	2011/12	2013/14
<b>Local (less than 10 miles)</b>	Education	Education	Education
	Engineering & Technology	Engineering & Technology	Engineering & Technology
	Humanities		
	Languages		
	Law		
	Social, Economic & Political Studies	Social, Economic & Political Studies	Social, Economic & Political Studies
<b>Regional (between 10 and 50 miles)</b>	Agriculture & Related Subjects	Agriculture & Related Subjects	Agriculture & Related Subjects
	Mathematical Sciences	Mathematical Sciences	
	Physical Sciences	Biological Sciences	Biological Sciences
	Librarianship & Information Science	Law	Law
<b>National (over 50 miles)</b>	Architecture, Building & Planning	Architecture, Building & Planning	Architecture, Building & Planning
	Business & Administrative Studies	Creative Arts & Design	Business & Administrative Studies
	Creative Arts & Design	Languages	Creative Arts & Design
		Librarianship & Information Science	Languages
			Librarianship & Information Science
<b>NTU Norm</b>	Biological Sciences	Business & Administrative Studies	Humanities
		Humanities Physical Sciences	Mathematical Sciences Physical Sciences

The Education, Engineering and Technology group and the Social, Economic and Political Studies group have always recruited disproportionately higher from the local area. For the Social, Economic and Political Studies group this one explanation may be due to some of the subject disciplines included in the this group, such as BA(H) Youth Justice or BA (H) Health and Social Care, which might appeal to students who had experienced widening participation activities. Humanities did recruit more of its students from the local area in 2008/09, but in more recent years did not recruit any differently from the NTU sample population as a whole. Law has moved away from being a subject group that attracted local students to one that had a more regional reach, and Languages similarly moved from local recruitment to national recruitment.

Agriculture and Related Subjects is a subject group that always recruited regionally over the period of this investigation. Physical Sciences moved towards recruiting in a similar pattern to NTU as a whole, and Librarianship and Information Science moved towards being a national recruiter of students. In their place, Law and Biological Sciences moved to be subject groups that more frequently recruited students whose homes were within the same region.

Architecture, Building and Planning and Creative Arts and Design always recruited most of their students nationally, whilst Business and Administrative Studies had a more variable recruitment pattern. In 2008/09 this group recruited more of its students nationally compared to the NTU average; in 2011/12, the year prior to fees increasing, it recruited in a manner consistent with the NTU average; and in 2013/14 its recruitment pattern had a more national reach. Librarianship and Information Science moved from being a regional recruiter to a national one.

Of note is that the Creative Arts and Design subject group recruited significantly more of their students nationally than any of the other subject groups that recruited on a national level. This may be due to the limited number of higher education institutions in the UK offering the subject disciplines contained within this group, so students wishing to study these subjects are forced to travel large distances from their homes to the universities that teach them.

Some subjects such as Humanities and Biological Sciences have not, for the most part, recruited any differently either during the period of study or from the NTU norm.

## Summary of points of interest

**Hypothesis 3a: Facing substantially higher fees, the mean distance travelled by students from the most deprived backgrounds (those classified in IMD Quartile 1) between home and university will be less than under previous regimes.**

This hypothesis was rejected. The following observations were made:

- There was no marked change in the distance between the students' home postcode area and their campus of study following the introduction of higher fees for any socio-economic group.
- From the data analysed in this study, there is no evidence to suggest that students from less affluent backgrounds are now, following the introduction of higher tuition fees, staying closer to home in order to undertake their studies.

*Hypothesis 3b: In the light of increased fees there is a positive relationship between the academic tariff on entry to university and the distance between the student's home and the place of study at NTU.*

This hypothesis could not be rejected. However, the following point was noted:

- There appears to be a relationship between the academic tariff on entry and the distance between the student's home postcode and campus of study. This relationship shows that the academic attainment of students increases in line with the distance between their home and place of study, up to a distance of 100 miles. This phenomenon existed prior to the introduction of higher fees and has continued post 2012/13.

**Hypothesis 3c: Following the introduction of higher fees, students from the local area are more likely to enrol on a vocational subject at NTU.**

This hypothesis was rejected:

- Subject groups such as Education; Engineering and Technology; and Social, Economic and Political Studies, which include subjects such as Social Work, can be considered vocational and

have always recruited students from a local market (less than ten miles). There has been no marked change to this recruitment pattern following the introduction of higher fees.

- It would appear that subjects do tend recruit on a local, regional or national basis at NTU. Following the increase in fees there has not been any marked change in this recruitment pattern, although looking over the entire period of this study there have been some limited changes.

**Hypothesis 4: Faced with cohorts of students paying substantially higher tuition fees, universities are likely to have change their entry requirements in order to recruit more students.**

After five years of successive increases in the average tariff on entry to NTU, 2013/14 saw a 4 per cent decline in the average tariff achieved by students. Notwithstanding this decline in the last academic year of this study, the average A-level tariff increased from 204 points in 2008/09 to 259 points in 2013/14, an average annual growth of 4.1 per cent. This trend needs to be put in the context of any changes to the ART that the university sets for its students. Table 15 illustrates that the ART increased from 233 tariff points in 2008/09 to 271 points in 2013/14, an average annual growth of 2.5 per cent.

**Table 15: Actual Tariff on Entry v. ART (2008/09 to 2013/14)**

Average Tariff	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Achieved by Students	204	228	233	243	271	259
Yr-on-yr Change		12%	2%	4%	12%	(4%)
Required by NTU	233	246	250	262	264	271
Yr-on-yr Change		6%	2%	5%	1%	3%

Until 2013/14 there had been an alignment between the increasing tariff achieved by students and the raised requirements of the university over the same period. Indeed, this trend of increasing A-level points can be seen in the percentage of top A-level grades achieved nationally (Table 16). However, this trend of students enrolling at NTU with increasing A-level tariffs saw a slight shift in 2013/14, with students entering NTU with fewer A-level points than those entering the year before.



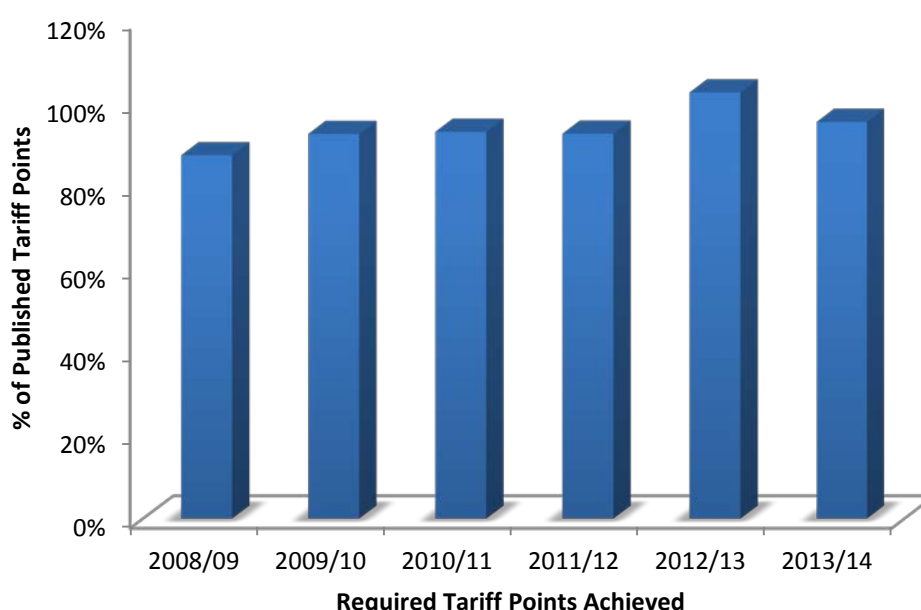
This is despite NTU increasing its ART, and national A-level results at the higher levels broadly staying the same as the year before.

**Table 16: Percentage of A-level Grades Achieved in the UK by Academic Year (2010/11 to 2013/14)**

Academic Year of Entry	A*–A	B	C	D	E	Other	A*–E
2013/14	26.7%	26.5%	24.3%	14.9%	6.2%	1.3%	98.7%
2012/13	27.0%	25.9%	24.0%	15.1%	6.5%	1.4%	98.6%
2011/12	27.2%	25.6%	23.8%	15.2%	6.7%	1.5%	98.5%
2010/11	26.9%	25.2%	23.5%	15.5%	7.1%	1.7%	98.3%

(Source: National Statistics, 2014)

Despite there being a small decline in the average tariff achieved nationally by students in 2013/14 compared with 2012/12, the tariff achieved in 2013/14 was 16 points higher than that achieved in 2011/12, the last year before the higher fee regime and the year in which NTU had a peak in student applications. Additionally, again with the exception of 2012/13, there has historically been a gap between the tariffs required by NTU and those achieved by students, as illustrated in Figure 25.



**Figure 25: Percentage of Required Tariff Points Achieved on Enrolment at NTU (2008/09 to 2013/14)**

This gap between the average tariff achieved on entry to NTU and the required tariff may be due to the University's policy regarding the confirmation of places following the publication of A levels in

August of each year. In some cases, the University will admit students to study at NTU even if they have missed the tariff point requirement. This practice of admitting students who have shown a commitment to study at NTU yet fail to achieve the required grades means that the University does not have to fill that same place through the clearing system.

Contrary to what the literature suggests, following the introduction of higher fees in 2012/13 the University did not lower its required tariff to attract more students. Instead, in the two years of increased fees, 2012/13 and 2013/14, NTU actually increased its tariff slightly.

### *Tariff Points by Academic School*

Whilst NTU, overall, did not reduce its ART in response to higher fees, Table 17 provides an analysis of the changes to the ART for each of its academic schools from 2008/09 to 2013/14. Each academic school has a number of related subject disciplines contained within it, further details of which are shown in Appendix 2. Table 17 suggests that at academic school level, there was no reduction in the ART between 2008/09 and 2013/14, and in only one case (the School of Arts and Humanities) did an academic school reduce its ART following the introduction of higher fees in 2012/13 (as indicated in red). This may be due to the higher fees or a change in the market demand for certain subjects such as Languages, which have suffered a decline in popularity in recent years.

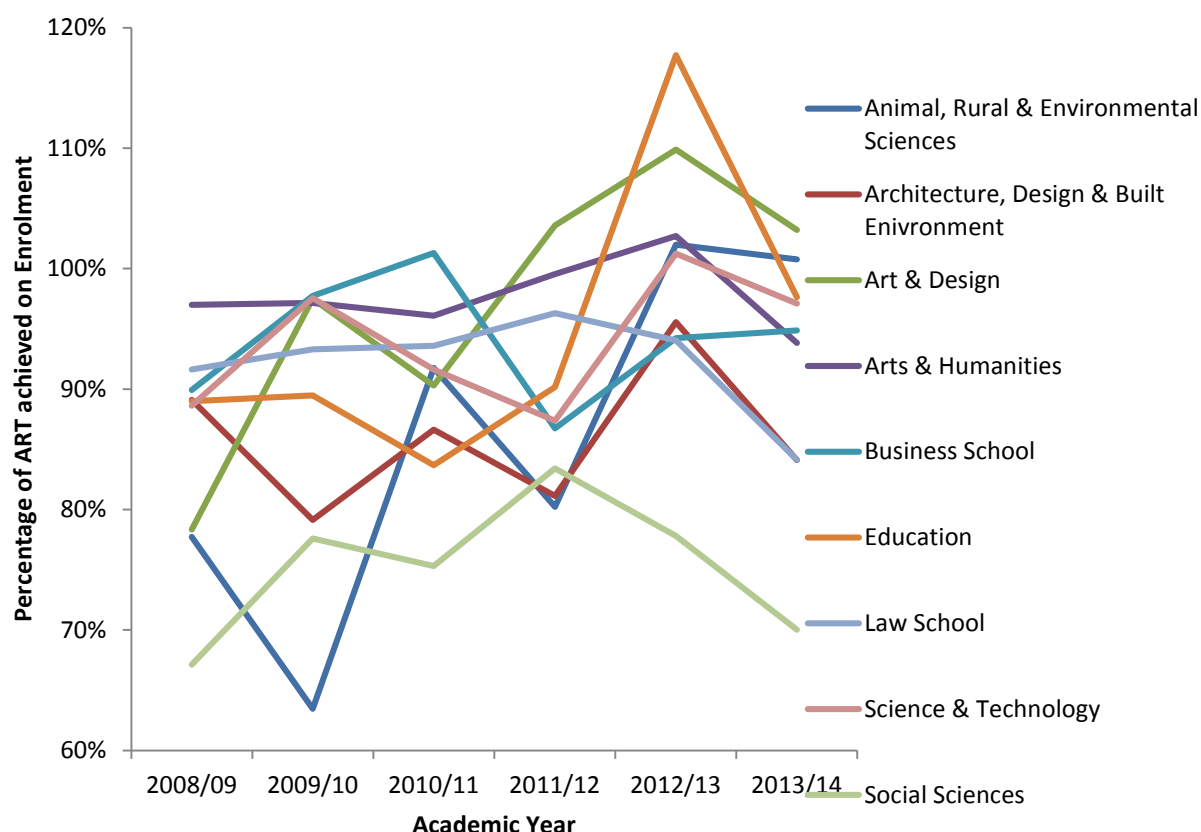
**Table 17: ART by Academic School (2008/09 to 2013/14)**

School	Academic Year						Change in Points Since	
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2008/09	2011/12
Animal, Rural & Environmental Sciences	198	207	188	217	240	243	45	25
Architecture, Design & Built Environment	225	263	244	267	267	271	46	4
Art & Design	247	260	266	267	271	290	43	23
Arts & Humanities	227	246	281	280	262	263	36	(17)
Business School	245	247	251	279	303	298	53	19
Education	215	215	225	220	222	256	41	36
Law School	280	297	300	300	300	300	20	0
Science & Technology	227	227	244	265	270	275	48	10
Social Sciences	220	220	226	229	260	276	56	47

Whilst Table 17 shows the ART of each academic school, Figure 26 illustrates the trended data of tariff achieved on entry as a percentage of each ART. With the exception of the School of Social Sciences, the overall trend of ART percentage achieved on entry increased across all schools up to 2013/14. The

School of Education saw the most marked growth, moving from 89 per cent of the ART in 2008/09 to 118 per cent in 2012/13. In 2013/14 all academic schools, with the exception of the Business School, saw a decline in the percentage of the ART achieved on entry. Despite a decline in the percentage achieved, two schools (Art and Design; and Animal, Rural and Environmental Sciences) had a student population that on average achieved in excess of the ART in 2012/13 and 2013/14. Four of the schools (Arts and Humanities; Business; Education; and Science and Technology) had student populations that enrolled with between 95 per cent and 97 per cent of the ART. The School of Architecture, Design and the Built Environment had variable performance in this respect, with students on average achieving between 80 per cent and 90 per cent of the ART between 2008/09 and 2011/12. In the first year of higher fees this percentage increased to 96 per cent, only to fall sharply in 2013/14 to 84 per cent. The School of Social Sciences, traditionally the school with the lowest percentage of ART on entry, showed a steady improvement from 67 per cent in 2008/09 to 83 per cent in 2011/12. However, in 2012/13, the year of the introduction of higher fees, the percentage of ART dropped to 78 per cent and declined to 70 per cent in 2013/14. This could suggest that the subjects in this school were more susceptible to higher fees, and as a result a lower percentage of ART was acceptable in order to meet the supply of places.

Thus, while the required tariff for most subjects either remained flat or increased since the introduction of fees, Figure 26 suggests that there are varying patterns in the gap between the required tariff and the actual tariff achieved, notably since the introduction of higher fees in 2012/13. There are differences in the percentage of ART achieved, which may be in part due to NTU's reaction to the increased fees. However, there may be other factors influencing these behaviours, notably in those subjects that saw an increase in the percentage of the ART achieved.



**Figure 26: Percentage of ART Achieved by Academic School (2008/09 to 2013/14)**

#### **Summary of points of interest**

**Hypothesis 4: Faced with cohorts of students paying substantially higher tuition fees, universities are likely to have changed their entry requirements in order to recruit more students.**

This hypothesis could not be rejected. The following observations were made:

- There is a difference between the required tariff published in the NTU prospectus and other media and the actual tariff that NTU will accept in order for a student to enrol on a course.
- For the first time in 2012/13 the average tariff achieved on entry to NTU was in excess of the ART demanded by the University. However, in 2013/14 the average tariff

achieved on entry to NTU was 96 per cent of the required tariff, in line with the historical norm.

- Overall, the ART increased following the introduction of higher fees, even though, as articulated above, in 2013/14 students on average failed to achieve the required academic attainment.
- A subject-by-subject analysis showed that there were differences in the ART. All subjects had increased their required tariff since 2008/09. However, following the introduction of higher fees in 2012/13, the subjects taught in the School of Arts and Humanities actually reduced their tariff required to enrol at NTU.
- An analysis of the percentage of the required tariff achieved on enrolment suggests that while some academic schools such as the School of Social Sciences increased their required tariff, the gap between this and the actual tariff on entry also increased. This suggests that for some subjects there was a change in behaviour in order to fill all available places.

## Chapter 6: Discussion

The change in the funding of English higher education is relatively new, and as such the findings of this case study provide an initial view rather than a set of results that can be generalised as future outcomes for NTU or for the English higher education system as a whole.

The majority of the literature reviewed in Chapter 2 concentrated on the individual elements that inform the decision-making process of students from certain socio-economic groups regarding higher education. In contrast, this study has considered all aspects of how an increase in tuition fees can change the behaviours of students, regardless of their background. Additionally, whilst there has been some research into understanding how students react to higher tuition fees through the mitigating action of staying closer to home to study, this has been limited to the context of students from lower socio-economic backgrounds rather than encompassing the entire student population. This study also looked at the propensity of students to choose certain subjects over others, and how NTU reacted in the light of increased fees.

What is remarkable is that despite the significant change in how higher education is now funded in England there has been no remarkable change to the student demographic at NTU or the behaviours of either the students or indeed NTU itself. The next section discusses this in more detail in relation to each of the hypotheses tested.

**Hypothesis 1: In the light of increased tuition fees, there will be fewer students from the most deprived backgrounds (those students classified in IMD Quartiles 1 and 2) attending university.**

One of the primary concerns of commentators was that the introduction of a tuition fee that was an apparent tripling of the existing fee, would deter many students from lower socio-economic groups from enrolling at university (Cook, 2012; Paton, 2013; Radcliffe, 2013). It would appear that there has been a change in the demographic of the students enrolling at NTU following the increase in fees, albeit a small change. However, the change is not as predicted by some commentators – that is, that poorer students would be discouraged from higher education – but is in fact that slightly more students from lower socio-economic groups are now enrolling at NTU following the increase in fees. Using the POLAR methodology, it can be seen there is a similar pattern of participation at the national level (Table 18). The POLAR Methodology classifies ‘wards’ into five groups, based on the proportion

of 18 year olds who enter HE aged 18 or 19 years old. These groups range from quintile 1 areas, with the lowest young participation (most disadvantaged), up to quintile 5, areas with the highest rates (most advantaged) (HESA, 2015). This methodology, whilst not exactly mirroring the methodology of this thesis, does illustrate that following the introduction of higher fees in 2012/13, there was a slight increase in the proportion of the most deprived students (quintile 1) accessing higher education in England and small decline in the most affluent (quintile 5)

**Table 18: Participation of English Domiciled Students by POLAR3 (2008/09 to 2013/14)**

POLAR 2 Quintile	2010/11	2011/12	2012/13	2013/14
Quintile 1	10.7%	10.8%	11.1%	11.4%
Quintile 2	15.6%	15.6%	15.8%	16.1%
Quintile 3	19.4%	19.3%	19.3%	19.6%
Quintile 4	24.1%	23.9%	23.7%	23.6%
Quintile 5	30.1%	30.2%	29.9%	29.1%
Unknown	0.2%	0.2%	0.2%	0.2%

Source: HESA (2015)

From 2008/09 to 2010/11, the student demographic of NTU was fairly static, with students from less affluent backgrounds making up approximately 39 per cent of the student population. In the year prior to the increase in tuition fees, 2011/12, this proportion declined slightly to 38 per cent yet increased to over 40 per cent in the first year of higher fees, 2012/13. In the second year of higher fees, 2013/14, the proportion increased slightly to 42 per cent. An explanation for this change in demographics may be due to behaviours of students from more affluent backgrounds trying to gain a place at university in 2011/12 before the fees increased from £3,200 to up to £9,000 per year rather than take a year out (a gap year), as suggested by Dearden *et al.* (2011). The authors noted that by going to university a year early in order to avoid higher fees, one consequence could be that more able students found themselves enrolling at universities that they would not have ordinarily considered, in order to secure a place. If this is the case then there is a clear suggestion that in 2011/12 students from more affluent backgrounds secured places at NTU, thereby displacing poorer students. However, in the two years following the introduction of higher fees, when many commentators voiced concerns that an increase in fees would mean fewer less affluent students accessing higher education, in the case of NTU there was a growth in participation from this group. This may be due to more prestigious universities lowering their entry requirements to attract more of the better students, especially as those securing A-level points greater than ABB were not included in the capped number regime. As such, more affluent students, who have greater academic attainment than less affluent students, have instead

enrolled at more prestigious universities than in previous years, thus freeing capacity at post-1992 institutions for a greater number of less affluent students.

Of particular interest is the continued lower participation rate of those students from Quartile 2 (the second most deprived group) compared to their less affluent counterparts (Quartile 1). The difference itself is not large (2 per cent in 2013/14), but it is a difference that has grown over the past three years and appears to be a persistent trend. As mention in Chapter 4, this disparity in the participation rate may be due to this group of young people being too affluent to access the full range of financial aid available to students from the poorest backgrounds, yet are not affluent enough to contemplate the costs of going to university.

Perhaps something that requires a watching brief is the continued reduction in the proportion of students from the second most affluent homes (Quartile 3) following the introduction of higher fees. Although the participation of students from both Quartiles 3 and 4 has reduced since 2012/13, there has been a greater reduction in those from Quartile 3. Students from this quartile made up only 25.1 per cent of the sample population in 2013/14, the lowest participation rate for this group over the period of study. Alongside this decline in students from the second most affluent background was the fact that this group demonstrated the largest year-on-year deterioration in academic attainment in 2013/14. Until 2011/12, it was this quartile, rather than the more affluent Quartile 4, who enrolled at NTU with the highest average tariff points. However, following the introduction of higher fees, the academic attainment of this group of students worsened. A possible explanation is that it is these students who are now enrolling at more prestigious universities, as the lowering of elite university tariff requirements make these universities more accessible to them.

There is an area of literature that suggests that students from more affluent backgrounds enrol at university with significantly better A-level results than those from less affluent backgrounds (Carneiro & Heckman, 2002; Galindo-Ruedo *et al.*, 2004). NTU has a required tariff, and entry to study there is predicated on students achieving that tariff; it can therefore be assumed that all students, regardless of background, achieve the required level of tariff points, with some students overachieving. The findings, however, imply that students from less affluent backgrounds (Quartiles 1 and 2) have lower academic attainment than those from more affluent backgrounds (Quartiles 3 and 4), suggesting that the overachieving students are indeed from more affluent homes.



The divergence in the average academic attainment of Quartile 1 and Quartile 4 students over the period of study was on average 17 per cent, with a particular difference in 2011/12 where the difference was 24 per cent; this difference closed in the two years following the introduction of higher fees. These findings do differ somewhat from what the literature suggests. In noting that there is a difference between the academic attainment of the most and most deprived students, there is the suggestion that able students from lower socio-economic backgrounds will enrol at a university with a required tariff below that of their potential attainment, as being able to fit in socially at university or other socio-economic considerations are more important to these students than attending an elite university (Reay, 1998). Both Reay *et al.* (2001a) and Evans (2009) reinforce this idea that intelligent students from poor backgrounds choose to enrol at universities that are below their academic abilities, as the need to 'fit in' is a greater priority to these students than realising their academic potential.

Certainly the literature would suggest that students from the most affluent backgrounds (Quartile 4) would typically be enrolling at more 'elite' universities, such as those in the Russell Group or other pre-1992 universities (Evans, 2009; Mathers & Parry, 2009). However, the findings suggest that most of the students in the sample population of NTU come from the most affluent homes, typically 33 per cent of all students enrolling between 2008/09 and 2012/13. It would appear that some of the more affluent students who achieved in excess of three A grades at A level chose to study at NTU rather than a more prestigious institution. It is likely that this proportion of students from the most affluent homes (33 per cent) is lower than at 'elite' universities.

**Hypothesis 2a: In the light of increased tuition fees, there will a change in the subjects which students apply to study at NTU; namely more students applying for vocational courses;**

In the literature review, the choice of subject studied at university was considered to be influenced by a number of factors the desire to be suitably qualified for employment following graduation (Szekeres, 2010); the perception of future earnings in order to offset the cost of university (Hossler & Stage, 1992; Arcidiacono *et al.*, 2012); and long-term career and earning prospects (Kallio, 1995; Soutar & Turner, 2002; Chowdry *et al.*, 2010; Forsyth & Furlong, 2000; Forsyth & Furlong, 2003; Hemsley-Brown, 1999).

As such, the literature suggests that subjects that students may perceive to have a more obvious career route following graduation (such as Law; Business and Administrative Studies; Education; Architecture, Building and Planning; and Librarianship and Information Studies) should all show an increase in applications following the increase in fees. However, an analysis of the applications to study at NTU between 2008/09 and 2014/15 showed that whilst applications to study at NTU as a whole declined following the introduction of higher fees, there was no marked change in the patterns of applications. The four subject groups (Creative Arts and Design; Business and Administrative Studies; Biological Sciences; and Social, Economic and Political Studies) that historically made up the majority of the applications (between 54 per cent and 59 per cent) continued to do so following the introduction of higher fees. As such, there appeared to be no change in applicant behaviours such as an increase in applications for subjects with an obvious or logical career following graduation such as Law, Business or Architecture. So, whilst there may have been a decrease in the overall applications to study at NTU following the introduction of higher fees, there was no change in terms of which subject groups attracted the most applications. Another point of note is that all students at NTU are afforded the opportunity to include vocational elements in their programme of study, regardless of the subject discipline; therefore, it could be argued that all courses offered by NTU are essentially vocational.

The analysis of whether there had been any change of applicant behaviours in terms of students applying for more vocational courses following the introduction of higher fees, suggests that there was no or very limited change. The findings in this thesis are reflected in the national situation (Table 19), which shows there has been minimal change in the applicant behaviours following the introduction of higher fees in 2012/13 across all subject groupings:

**Table 19: Applications made to English Universities by English Domiciled Students by Subject Groupings (2008/09 to 2013/14)**

Subject Grouping (JACS Code)	Academic Year								Chg 2015/16 to 2012/13
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	
Group A Medicine & Dentistry	3.4%	3.2%	3.2%	3.2%	3.4%	3.4%	3.3%	3.1%	-0.3%
Group B Subjects allied to Medicine	10.5%	11.3%	12.9%	14.0%	15.6%	15.7%	15.9%	15.2%	-0.4%
Group C Biological Sciences	8.1%	8.2%	8.4%	8.5%	8.7%	9.1%	9.6%	10.3%	1.5%
Group D Vet Sci, Ag & related	0.9%	0.9%	1.0%	1.0%	1.1%	1.1%	1.2%	1.1%	0.0%
Group F Physical Sciences	3.6%	3.5%	3.5%	3.7%	3.9%	4.1%	4.1%	4.3%	0.4%
Group G Mathematical Sciences	1.5%	1.6%	1.6%	1.6%	1.6%	1.7%	1.6%	1.8%	0.1%
Group H Engineering	3.5%	3.8%	3.7%	3.7%	3.9%	4.1%	4.4%	4.7%	0.8%
Group I Computer Sciences	3.2%	3.3%	3.3%	3.4%	3.4%	3.6%	3.9%	4.0%	0.7%
Group J Technologies	0.5%	0.5%	0.5%	0.4%	0.4%	0.3%	0.4%	0.3%	-0.1%
Group K Architecture, Build & Plan	1.9%	1.8%	1.5%	1.4%	1.3%	1.2%	1.1%	1.1%	-0.1%
Group L Social Studies	7.9%	8.3%	8.6%	8.4%	7.9%	7.8%	8.0%	8.3%	0.4%
Group M Law	4.3%	4.3%	3.9%	3.8%	3.9%	4.0%	3.8%	3.9%	0.0%
Group N Business & Admin studies	10.4%	10.4%	9.9%	9.9%	9.9%	9.9%	9.8%	9.9%	0.0%
Group P Mass Comms and Documentation	2.3%	2.4%	2.2%	2.3%	2.1%	2.2%	2.2%	2.3%	0.2%
Group Q Linguistics, Classics & related	3.3%	3.4%	3.1%	2.9%	2.9%	2.8%	2.7%	2.8%	0.0%
Group R European Langs, Lit & related	1.1%	1.1%	1.0%	0.9%	0.9%	0.8%	0.7%	0.8%	-0.1%
Group T Non-European Langs, Lit and related	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.2%	0.3%	0.0%
Group V Hist & Philosophical studies	3.7%	3.8%	3.5%	3.3%	3.4%	3.4%	3.4%	3.6%	0.2%
Group W Creative Arts & Design	10.8%	10.9%	11.6%	11.6%	10.6%	10.4%	10.5%	10.4%	-0.2%
Group X Education	3.3%	3.5%	3.6%	3.8%	3.8%	3.6%	3.5%	3.1%	-0.7%
Y Combined arts	3.5%	3.0%	2.9%	2.7%	2.5%	2.3%	2.1%	1.9%	-0.6%
Y Combined sciences	1.7%	1.5%	1.5%	1.5%	1.5%	1.4%	1.4%	1.2%	-0.3%
Y Combined social sciences	1.5%	1.2%	1.1%	1.1%	0.9%	0.9%	0.9%	0.8%	-0.1%
Y Sciences combined with social sciences or arts	5.1%	4.3%	4.2%	3.8%	3.4%	3.0%	2.6%	2.2%	-1.2%
Y Social sciences combined with arts	2.9%	2.5%	2.4%	2.2%	2.0%	1.9%	1.7%	1.6%	-0.4%
Z General, other combined & unknown	0.8%	0.8%	0.7%	0.7%	0.9%	0.9%	1.0%	0.9%	0.1%

Source: UCAS (2015)

The finding of a trend in a decline in applications, however, is of concern from both an academic and business planning perspective. The literature review suggests that universities can counter the impact of any fall in demand following an increase in fees by either reducing the required tariff (Leslie & Brinkman, 1987; Abbott & Leslie, 2004) or reducing the net cost of attending university through the use of increased financial aid or reduced tuition fees (Leslie & Brinkman, 1997; Hills & Richards, 2012). However, it would appear that NTU has not undertaken a reduction or discounting of either the academic criteria or the fee charged to the student in order to counteract a decline in applications. This may be due to the present climate where there is an omnipresent pressure of published university rankings, league tables and Key Information Sets, which means that it is not desirable to reduce academic criteria and lower NTU's ranking. The 'Giffen good' nature of the English higher education

market, whereby price signals quality, also suggests that a greatly reduced tuition fee might not actually stimulate demand. The use of increased financial aid as a mechanism to encourage applications may be of limited value, not least because many students are unclear as to what financial aid they can access until they have enrolled at their chosen university (Leslie & Brinkman, 1997; Smith & Cavusgil, 1984; Tierney & Venegas, 2009; Mathers & Parry, 2009).

**Hypothesis 2b: Students from the most affluent backgrounds (those classified in IMD Quartile 4) will be more likely than their less affluent counterparts to enrol on academic subjects.**

Some commentators claim that the choice of subject studied at university is aligned to the socio-economic group to which the student belongs (Davies & Guppy, 1997; Hansen, 1997; Hemsley-Brown, 1999; Van de Werfhorst *et al.*, 2003; Mocetti, 2008) and the involvement of their parents, with the level of parental involvement being linked to the student's social class (Bourdieu, 1984; Lucas, 2001; Coughlan, 2008; Van de Werfhorst & Luijkx, 2010). The literature suggests that students from more affluent backgrounds are more likely to study elite academic subjects with high cultural value, with students from less affluent backgrounds enrolling on more vocational courses.

As discussed previously, the JACS subject groupings used in this analysis do not easily lend themselves to being classified as either 'vocational' or 'non-vocational', and all courses offered at NTU contain elements of vocational education. Nonetheless, the use of a multinomial logistic regression model of subject choice by IMD quartile using JACS codes (using IMD Quartile 4 as the referent group) did suggest that students from less affluent homes are relatively more likely to enrol in both Law and Engineering Technology subjects than their more affluent counterparts.

Using Van de Werfhorst *et al.*'s (2003) classification of subject groups, one of which was defined as 'prestigious' (Law and Medicine), in a multinomial logistic regression model of subject choice by IMD quartile (using IMD Quartile 4 as the referent group), the results suggest that certain subject groups (Social Studies and Law) are chosen relatively more often by students from less affluent backgrounds. Students from more affluent homes are more likely to choose subjects in the Arts and Economics subject groups. The findings in this study (Document Five) are broadly consistent with Van de Werfhorst *et al.*'s (2001) findings and results using JACS codes. However, Law is one of the subject groups classed by Van de Werfhorst *et al.* (2001) as being 'prestigious', and is therefore more likely to

have affluent students choosing this subject group. However, at NTU, statistics show that Law is relatively more likely to be chosen by the most deprived students.

These findings are only partially reflected at a national level. Table 20 shows the proportion of students from the most deprived quintile (Q1), using the POLAR3 classification, enrolled in each subject grouping from 2008/09 to 2013/14. For some subjects such as Agriculture and Related Studies, Biological Sciences, Law, Mathematical Sciences and Social Studies, the pattern of subject choice for the most deprived students (IMD Quartile 1) is reflective of comparable POLAR3 Quintile 1 patterns of enrolment at a national level. Of note is Creative Art and Design, which is relatively more likely to be chosen by the most affluent student at NTU, yet at the National level. there is a greater percentage of the most deprived students enrolled upon courses contained in this subject group than there is for Social Studies.

**Table 20: Percentage of Quintile 1 English-domiciled Students enrolled at English Universities by Subject Grouping (2008/09 to 2013/14)**

Subject Grouping (JACS Code)	Academic Year					
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Agriculture & related subjects	9.0%	8.3%	7.8%	8.0%	8.3%	10.1%
Architecture, building & planning	6.8%	7.4%	7.8%	8.9%	10.2%	9.7%
Biological sciences	11.0%	11.7%	11.7%	11.6%	13.0%	13.3%
Business & administrative studies	10.0%	10.1%	10.3%	10.5%	11.4%	11.6%
Combined subjects	13.6%	12.6%	9.8%	8.7%	8.6%	9.5%
Computer sciences	13.0%	13.5%	14.3%	14.4%	15.5%	14.8%
Creative arts & design	11.4%	11.6%	11.7%	11.9%	13.2%	12.7%
Education	13.8%	13.4%	13.3%	13.7%	15.1%	14.4%
Engineering & technology	8.2%	8.8%	8.7%	9.3%	9.5%	9.4%
Historical & philosophical studies	7.7%	7.7%	7.8%	7.7%	8.3%	8.1%
Languages	8.2%	8.6%	8.4%	8.5%	8.9%	8.8%
Law	12.3%	12.3%	13.2%	12.9%	13.5%	14.0%
Mass communications & documentation	11.8%	12.2%	12.9%	12.7%	14.2%	13.7%
Mathematical sciences	8.1%	8.2%	7.9%	8.8%	8.7%	9.4%
Medicine & dentistry and veterinary science	4.5%	4.1%	5.1%	4.5%	4.5%	4.9%
Physical sciences	8.6%	8.9%	8.9%	8.7%	9.3%	9.1%
Social studies	9.4%	9.5%	9.6%	9.3%	10.3%	10.9%
Subjects allied to medicine	10.7%	10.5%	11.2%	11.8%	12.4%	12.4%

Source: HESA (2015)

Key: Red – reflects pattern of enrolment a NTU

Green – inverse to the pattern of enrolment at NTU

These findings are of use to NTU management, as the propensity for less affluent students to enrol in certain subjects groups (especially Social, Economic and Political Sciences and Education) may be due to the subject disciplines contained therein (such as Youth Studies, Youth Justice and Childhood Studies) being considered to be widening participation subjects. Furthermore, the relative likelihood of students from poorer backgrounds to choose certain subjects may influence the choice of curriculum enhancements, such as international experiences, and even the delivery patterns of lectures and seminars in order to meet the needs of these students and any constraints they may face.

**Hypothesis 3a: Facing substantially higher fees, the mean distance travelled by students from the most deprived backgrounds (those classified in IMD Quartile 1) between home and university will be less than under previous regimes.**

Students from poorer backgrounds have a tendency to be more price sensitive to tuition fees than their more affluent counterparts (Heller, 1997). A number of authors indicate that these students will either enrol at universities with a low cost of living (Callender & Jackson, 2008; Crawford & Dearden, 2010), attend a university that is close to home in order to avoid paying accommodation costs, even if this means foregoing the opportunity to attend an elite institution (Gibbons & Vignoles, 2012; Forsyth & Furlong, 2003; Crawford & Dearden, 2010), or enrol at a lower-priced university (Leslie & Brinkman, 1987). A 2012/13 survey of students who declined a place at university in that same year indicated that one of the most common reasons that students did not take up a place at university was the distance from their home (UCAS, 2012).

There was no noticeable change in the distance between the home postcode area of a student and their campus of study following the introduction of fees, which it is assumed might happen in order to save costs. The highest proportion of students (an average of 28 per cent over the study period) travelled between 50 and 100 miles from their home to the campus of study. There was no change to this group in the two years following the introduction of fees in 2012/13. Overall, there was no marked change to the geographical recruitment of students over the study period or following the introduction of higher fees. This includes students of lower socio-economic backgrounds, who might be expected to study closer to home in order to save money. This is reflected in the national situation shown (see Table 21,) which, at the point of application and across all socio-economic groups, suggests a small reduction of student stating they intend to live at home at the point of application.

**Table 21: Percentage of English-domiciled Students applying for courses by year and stating at application that they intend to live at home (POLAR3 Methodology)**

POLAR 2 Quintile	2010/11	2011/12	2012/13	2013/14
Quintile 1	33.4%	33.4%	32.6%	30.8%
Quintile 2	28.7%	29.1%	27.9%	27.5%
Quintile 3	23.8%	23.5%	22.8%	22.0%
Quintile 4	16.2%	16.3%	15.9%	15.0%
Quintile 5	11.4%	11.3%	10.7%	10.5%

Source: Independent Commission on Fees (2014)

One explanation is a possible historical trend for able, academically able students living within ten miles of NTU to enrol at the University of Nottingham rather than at NTU if they are particularly price sensitive or seeking to save money, and this trend may have continued following the increase in fees.

**Hypothesis 3b: In the light of increased fees there is a positive relationship between the academic tariff on entry to university and the distance between the student's home and the place of study at NTU.**

The findings suggest that there is a clear relationship between the distance students travel from their home postcode area to their campus of study and their academic attainment on enrolment at NTU: the greater the distance, the higher the A-level tariff generally achieved, until the distance reaches over 100 miles. There was no change to this relationship following the introduction of fees, and this may have implications for how NTU markets its courses.

This relationship between students' academic tariff on entry and the distance they travel from their home postcode area to their place of study may be partly due to the socio-economic composition of each distance category. The nearer to NTU, there are proportionally more students from less affluent homes. One explanation for this may in fact be the result of a strategy that NTU has followed with regard to widening participation.

For many years NTU has been a university that has undertaken a programme of widening participation activities in its local area, which is predominately within the city of Nottingham. Thus, it would be expected that students who are recruited from within ten miles of the campus of study would be

students who have lower A-level grades or are offered a lower entry tariff by virtue of being from a less affluent background. Whilst this is true to an extent, the proportion of students from Quartile 1 was only 29 per cent to 34 per cent of all students who travelled less than ten miles between their home postcode area and campus of study, so this is not as substantial as the literature would suggest (Reay *et al.*, 2001a; Reay *et al.*, 2001b; Evans, 2009). Of additional note is the slight over-representation of Quartile 1 students who travelled between 30 and 50 miles, similarly making up 30 per cent of this group; this perhaps suggests that NTU recruits from other regional cities such as Leicester and Sheffield where good travel links exist. Nonetheless, for Quartile 1 students, who may not have a family background of going away to university (Reay *et al.*, 2001a), it is perhaps not unsurprising that as the distance between home postcode areas and the campus of study increases, the representation of this group decreases.

**Hypothesis 3c: Following the introduction of higher fees, students from the local area are more likely to enrol on a vocational subject at NTU.**

Using the Boundary Commission for England's definition of regions, the largest proportion of NTU's students (34 per cent) was recruited from the East Midlands administrative region in 2013/14. This showed a slight decline from 2009/10, when 37 per cent of students were recruited from the region. This pattern of geographic recruitment accords with the data showing that between 29 per cent and 34 per cent of students' postcode areas are within 30 miles of the campus of study. Of note is the concentration of universities within the East Midlands: a total of nine universities within that regional boundary. Therefore, it could be suggested that some students are choosing to enrol at NTU rather than at a university closer to their home. However, greater analysis involving the demographic of all nine universities in the region would need to be undertaken to confirm this suggestion.

Of use to NTU management are the patterns of geographical recruitment. It would appear that there are very clear patterns of how subjects recruit, which did not, on the whole, change over the period of this study. Certain subject groups (Engineering and Technology; Social, Economic and Political Studies; and Education) tended to recruit more locally (within ten miles of the campus of study), whilst some subject groups (Agriculture and Related Subjects; Biological Sciences; and Law) had a more regional recruitment reach. Other subject groups (Creative Arts and Design; Architecture, Building and Planning; and to a lesser extent, Business and Administrative Studies; and Librarianship and Information Science) had a more national recruitment pattern. There were also, of course, subject



groups that recruited students in a pattern that represented the NTU population as a whole (Humanities; Mathematical Sciences; and Physical Sciences).

This pattern of recruitment did not change following the introduction of higher fees and may reflect the students' view of the intrinsic value of such courses in relation to the further costs required to travel a further distance to study at NTU. Of note is the relative preference of students from less affluent homes to study subjects that recruit on a more local basis, and the resultant relationship between students' average tariff on entry and the distance they travel from their home postcode area to their campus of study.

**Hypothesis 4: Faced with cohorts of student's paying substantially higher tuition fees, universities are likely to have changed their entry requirements in order to recruit more students**

Education is a peculiar product/service in that not only do consumers (students) have to have the financial resources to attend university, but they also need to meet the standard of academic attainment set by the individual university to gain a place on their course of study. According to Leslie & Brinkman (1987), one of the ways in which universities counter a decline in demand for places following an increase in fees, is to lower the entry requirements to enable a greater number of potential students to apply for a place.

The findings reveal that in 2013/14 the average tariff on entry to NTU was 259 A-level points; whilst there was a decline of 12 points against the average tariff on entry for 2012/13, this was the second highest average tariff over the study period. This decline in the average tariff on entry brought to an end five years of successive increases in the average tariff on entry. However, this trend needs to be put into the context of the changing tariff demanded by NTU and also how A-level students performed nationally: over the same five-year period the average required tariff demanded by NTU increased each year, and from 2010/11 to 2013/14 national A-level results also increased year on year.

Whilst NTU did not reduce its A-level tariff to ensure that student recruitment stayed buoyant in the face of increased fees, there are a number of points of particular interest. In 2012/13 the average tariff demanded by NTU was 264 A-level points, some 7 points less than the actual average tariff achieved by the students of 271. Historically, students achieved approximately 93 per cent of the published (demanded) A-level tariff, but in 2012/13 they achieved 103 per cent of the A-level tariff. This may

imply that some students enrolled at NTU with higher A-level points than required, rather than enrolling at another, more 'elite' institution. However, in 2013/14, students achieved 96 per cent of the average tariff. This may be due to the decline in students from less affluent homes enrolling at NTU in 2013/14.

From 2008/09 to 2011/12 NTU increased its required tariff by an average of 4 per cent each year. However, in 2012/13 it only increased the required tariff by 1 per cent. Perhaps encouraged by the academic attainment of the students enrolling in 2012/13, NTU increased its required tariff by 3 per cent in 2013/14. This suggests that rather than decrease the required tariff in the two years following the introduction of higher fees, NTU actually sought higher academic attainment for entry.

An examination of the published points at a subject group level suggests that whilst at NTU there was an increase in the required tariff following the introduction of fees, some subjects (those taught by the School of Arts and Humanities) saw a decline. Other schools did not change their point requirements at all, whilst some (the School of Education and the School of Social Sciences) increased theirs by a marked amount. This action of increasing or decreasing the required tariff at subject group level may be a reaction to competitor universities' offer strategies for attracting students, as the demand for all subject groups remained fairly stable following the introduction of higher fees. This NTU strategy allows academic schools to set their tariff in relation to the demand for places.

Overall, NTU students achieved 96 per cent of the increased published tariff in 2013/14. Just as there were different patterns of behaviours between subject groups and changes to published tariffs, the percentage of required tariff achieved varied at academic school level. Of interest is the School of Social Sciences, which had increased its published tariff by 47 points since 2011/12, yet allowed students who on average achieved 70 per cent of the published tariff to enrol in 2013/14. For some subjects (those taught by the School of Art and Design and the School of Animal, Rural and Environmental Sciences), an increase in tuition fees was accompanied by a notable increase in the required tariff, although this is probably not a case of cause and effect. Both these academic schools had been enrolling students on their courses with average tariff points in excess of 100 per cent of the published requirements since the introduction of higher fees in 2012/13.

In a market where league tables and ranking positions have a strong omnipresent influence, and where additional data is published by the government through Key Information Sets, the maintenance of the average tariff needs to be a deliberate strategy in order for NTU to maintain its position in the

rankings whilst ensuring future demand from students and balancing the business model of the university.

The findings suggest that, for the most part, there has been no marked variation in student numbers or in the types of students enrolling at NTU following the introduction of fees. With regard to the student demographic, this could be considered a positive finding, as the 'DNA' of the University has not changed organically or purposely following the increased fees, with students from all backgrounds accessing NTU in similar proportions as they have historically done.

Additionally, in terms of the academic and pedagogic aspects of the University there has not been a huge change in enrolments in terms of subject groupings or a need to significantly reduce the ART in order to stimulate demand. By having fairly static enrolments across all subject groupings, NTU can maintain its broad portfolio of subjects without adverse financial consequences or restructuring to reduce costs.

It is important to note that although the findings do not present a robust case, they do provide a useful illustration of the NTU student population following the increase in tuition fees. To reiterate, whilst the findings in this study are positive in terms of there being no marked impact on NTU following the introduction of fees, the analysis of just two sets of data relating to the new fee regime means it is far too early to draw any generalisations. Additionally, the data that was used in the study did not account for any interventions the University had already taken to ensure that the correct numbers of students enrolled on the courses on offer, as these interventions are very hard to quantify. Therefore, the findings of this case study provide an initial view rather than a set of results that can be generalised as future outcomes either for NTU or for the English higher education system as a whole. In summary, the results of the investigation are presented in Table 22;

**Table 22: Summary of the results of testing each hypothesis**

<b>Hypothesis No.</b>	<b>Hypothesis</b>	<b>Outcome</b>
<b>1</b>	In the light of increased tuition fees, there will be fewer students from the more deprived backgrounds (those students classified in IMD Quartiles 1 and 2) attending university.	Rejected
<b>2a</b>	In the light of increased tuition fees, there will be a change in the subjects that students apply to study at NTU: namely, more students will apply for vocational courses.	Rejected
<b>2b</b>	Students from the most affluent backgrounds (those classified in IMD Quartile 4) will be more likely than their less affluent counterparts to enrol on academic subjects.	Could not be rejected
<b>3a</b>	Facing substantially higher fees, the mean distance travelled by students from the most deprived backgrounds (those classified in IMD Quartile 1) between home and university will be less than under previous regimes.	Rejected
<b>3b</b>	In the light of increased fees there is a positive relationship between the academic tariff on entry to university and the distance between the student's home and the place of study at NTU.	Could not be rejected
<b>3c</b>	Following the introduction of higher fees, students from the area local to NTU are more likely to enrol on a vocational subject at NTU.	Rejected
<b>4</b>	Faced with cohorts of students paying substantially higher tuition fees, universities are likely to have changed their entry requirements in order to recruit more students.	Could not be rejected

## Chapter 7: Conclusions

The objective of this thesis was to investigate the change in the student demographic accessing NTU following the introduction of higher fees in September 2012. The thesis (Document Five) forms the final part of the overarching objective of the DBA, which was to analyse the impact of the 2010 Browne Review and the 2010 Amendment to the Higher Education Act 2004 on student demands and expectations, using NTU as a case study. As mentioned in both the findings and the discussion, there was some limited change to NTU in the first two years of higher tuition fees, which came into effect following the changes in the fee regime in 2012/13. However, most noteworthy are considerations that are not included in the analysis of the data, which can provide directions for further research and potential collaborations with other universities.

The idea of increased fees was first introduced in the Browne Review published in October 2010, with the resultant recommendation for higher fees being implemented in September 2012. Students who enrolled at university in 2012/13 and 2013/14 would have been in their first year of A-level studies or the last year of their GCSEs when the notion of higher fees was first introduced, and as such they may have already made up their minds to attend university. Some of the literature suggests that students typically decide to go to university at the age of 16 (Hossler & Stage, 1992; Moogan *et al.*, 1999; Connor *et al.*, 1999; Payne, 2003), so there may be a delay in the impact of the increased fees as students who have had a greater length of time to consider all the options available to them may decide not to apply to university given the increased fees.

The findings of the quantitative data show, for the most part, that there has not been any significant change to NTU's first-year undergraduate student population. However, the participation of students from lower income homes, whilst not large, has increased slightly. This is reassuring, as many of the fears raised at the time of increased fees suggested that a large number of young people would not participate in higher education as a result. The rhetoric also suggested that in order to save money, for example, students would attend universities closer to home and thus forfeit the opportunity to attend an elite university. This trend has not occurred at NTU. This could be due to the fact that the fees are so high (£8,500 in 2012/13 and £8,750 in 2013/14) that students have to take out large loans, and as such, their perception might be that living at home would not save them any tangible amount of money.

NTU maintained its ART in 2012/13, although it did not in 2013/14. The average tariff on entry declined in 2013/14 compared to 2012/13. However, this average tariff on entry was 96 per cent of the ART,

suggesting that there was no large erosion in the academic attainment on entry. This is due in part to NTU's position in the English university market being towards the top of the mid-ranking universities. As such, any change in the offer strategies of universities with a more prestigious ranking, such as the Russell Group of universities, may mean that NTU has to change its offer strategy in order to have sufficient demand for places. This position of being somewhat at the mercy of other universities' behaviours may also be an explanation for the decline in students from more affluent homes enrolling at NTU in 2013/14. This suggests that these students, who are also on average academically stronger, have enrolled at alternative universities with a higher ranking.

### **Implications for practice: NTU**

The entire English higher education system, including NTU, is in the process of moving to a new reality of university education. The first two years of higher fees have seen some changes in the student population and the choices these students make, but the changes to the funding of higher education in England are still in the early stages. Although the changes to be seen at NTU may be considered slight, they may indicate further change in the future. Therefore, NTU must begin to focus on the mechanisms required to support a changed student population and to embed these support mechanisms across the University; it must also start to consider structures and processes that will guarantee sustainability for the future. There are a number of critical areas that have emerged and will require attention from the University's leadership team in the very near future. The following recommendations are suggested;

#### *Review the Offer Strategy*

It is clear from the findings that different academic schools at NTU find themselves operating in very different markets with regard to the ART for entry that each school will accept from students wishing to enrol on their courses. This is manifested through differences in the ART and the percentage of the ART achieved on enrolment to NTU. There are external factors that influence both the ART and the average tariff on entry with which students are accepted to enrol. One of these factors is NTU's need to secure a favourable position in university league tables such as those published by *The Times* and *The Guardian*, which all universities consider as strategically important in terms of enhancing reputation and thus also enhancing student recruitment both within the UK and globally. However, as seen in the literature, students have a tendency to 'self-select' the universities they apply to based on the ART; therefore, by increasing or maintaining the ART, NTU may be deterring students from applying who actually achieve a higher average tariff than those students who NTU recruit via the

clearing system with a lower average tariff when demand for places does not meet the available places.

### *Ensure That all Students are Supported*

If NTU finds itself continuing to enrol students with a significantly lower average tariff than the ART, then there need to be appropriate support mechanisms in place to ensure that these students are confident and able to be successful in their studies. Whilst it is widely understood and acknowledged that progression from the first year of an undergraduate course of study through to a successful completion of the course and graduation will never be 100 per cent certain, the University believes has a moral responsibility to ensure that all students accepted onto its courses with lower than average tariff points are supported academically so they can progress to a successful outcome rather than leave due to academic failure or becoming disillusioned with a university education.

Similarly, for those students who achieve the ART yet find themselves on popular courses with large cohorts of other students, it is important that these students feel supported and not like they are just a 'face in the crowd'. This type of support may be a challenge to achieve, as there is no established way to identify particular areas of support that students require to make them feel that they 'belong'.

Lastly, in terms of changes to student support mechanisms, the change in the proportion of students coming from the most deprived backgrounds may require a change in cultural support, as these students may have no prior knowledge of the experience of going to university through their family or friends. Alongside the additional financial aid to support living costs and tuition fees already offered by NTU, consideration should also be given to how these students can be supported both financially and pastorally so that they can undertake activities and initiatives that their more affluent counterparts partake in, such as studying abroad, summer schools and student societies. These are activities that not only enrich the experience of students whilst they are at university but also enhance their employment prospects post-graduation.

### *Create a Genuinely Innovative Student Experience*

NTU's place in both the English and global higher education market creates vulnerability in a number of ways: those universities considered to be more prestigious are able to expand their courses and enrol marginal students with a slightly lower academic tariff on entry, at very little incremental cost. It is these students who may have ordinarily applied and enrolled at NTU, but now find themselves

being able to 'upgrade' their university. In the two years since the introduction of higher fees, there is evidence that perhaps this change in student choice has already started to change behaviours, notably amongst those students with greater academic credentials. Furthermore, the position NTU holds in university league tables means that it does not have the cachet to make up any shortfall in student numbers by attracting international students with the same academic credentials as those it is losing to other universities.

NTU has a reputation for being a university that offers relevant vocational courses, with a high percentage of its graduates finding graduate-level employment. NTU must build on its reputation to create a genuinely innovative model that will clearly set it apart from other universities, both in the UK and globally. NTU is a large university with a diverse subject portfolio in a popular student city; by investing in innovative curricula both in terms of pedagogies and mode of delivery, NTU could set itself apart. Whilst not included in the scope of this thesis, NTU has a number of successful undergraduate distance learning courses, with students all over the UK and the world studying NTU courses without ever having to visit Nottingham. These courses are limited in terms of the number on offer and are discrete, standalone courses.

### *Review the Portfolio*

For enrolment in 2015/16, there are 210 different courses at NTU on offer to potential students. As discussed earlier, some courses have accepted students with lower academic tariffs than the ART in order to fill the available places. This may be due to the subject being relatively more likely to be chosen by students from lower socio-economic groups, and thus the average tariff achieved on enrolment will be lower. This may also be due to students being able to study the same subjects at a more prestigious university, or merely down to certain subjects not being fashionable at the moment.

Whilst it would not be prudent to close courses that struggle to recruit students at the ART after just two years of higher fees, there should be a review of the portfolio of courses across NTU to understand the demand for each course and how this could be enhanced in order to stimulate further demand. It may be that some courses or subjects are no longer viable in terms of demand and the resources required to teach the students that these courses do recruit. This may not mean, however, that these courses would need to be closed completely. Instead, they could be included in interdisciplinary programmes, which could have the potential to create a genuinely unique student experience, as noted previously.



At the time of writing this thesis (Autumn Term, 2014), NTU is in the process of writing its strategic plan, for the five academic years from 2015/16 to 2019/20. Both the findings of this thesis and the recommendations made above are pertinent for the strategic review that is currently underway.

### *Leverage NTU's Regional Role*

There has always been acknowledgement that NTU has recruited regionally, yet this has remained marginal, with student recruitment activities and corporate engagement being on a national level with no specific regional activity undertaken. NTU should build a name for itself in the region for student recruitment, research and engagement with business, the latter two being important conduits for enhancing teaching. NTU should seek to undertake a more strategic yet regionally based outreach programme for both undergraduate and professional courses. This would enable NTU to strengthen its reputation in the region and diversify its student type through the recruitment of professional courses.

### **Ethical considerations for Practice**

NTU need to be mindful of how it implements its strategy, notably those strategies which concern the change to the Average Required Tariff (ART). As discussed throughout this thesis, student choice is inextricably related to socio-economic status and academic ability. The current practice involves having a strategy that results in an increasing ART year on year. Yet when the university enters the period of confirmation and clearing in August of each year and gains a clearer picture of the demand for places, the tariff required is either reduced or, we 'cross-sell' to applicants with lower than predicted results a place on a course with a lower ART, and this may have a far reaching impact for these students. Of note are those students from more deprived backgrounds who enrol with a lower tariff and who struggle to engage and thrive at university. For these students who withdraw from university part way through their course of study, not only is there an emotional cost, the financial cost is now far greater. Care should be taken with the practice of enrolling students onto courses that are already highly subscribed, in order to balance the business model of the university. Providing an academic experience these students are entitled to which they are now paying greater amounts of money for, should be a priority.

### **Implications for practice: the wider university sector**

Some of the considered changes articulated in the context of NTU will also apply to other universities in England. Given the distinctly segmented market that is the English higher education system, any

changes to the student population and the choices students make will have a marked effect on each university, depending on its position in the market; 'elite', 'red brick' and 'new universities'.

It is worth considering that the English higher education system as a whole has to compete with other universities all over the world. In the advent of higher fees, some Dutch universities have marketed their courses taught in English to UK students, with the advantage of significantly cheaper tuition fees at these institutions. In 2015 the student number control cap is due to be removed, and some commentators anticipate that the £9,000 tuition cap will also be removed post the 2015 general election. When this happens, further competition for the most able and best students will come from universities in the US, whose tuition fees may once have been considered 'too expensive' but would actually become comparable with the fees payable in England.

As noted in the opening comments of this chapter, NTU and other English universities are moving into a new reality of higher education. As a large teaching university with a good reputation in a popular student city, NTU is entering this new reality in a position of strength. However, there have been some changes, albeit small, to the student population and the choices they make at NTU. These changes must be considered tentative, as they are found in just two years of data, and the real impact of increased fees is either still to emerge or will manifest in these slight changes possibly becoming major changes over time (or indeed possibly disappearing entirely). Whilst early indications are that there has been 'not much change' following the recent increase in tuition fees, NTU should consider the recommendations noted earlier in order to maintain its position of strength. This is particularly important as NTU is charging 'elite' university prices without being an 'elite' university. In a perfect market this would normally mean NTU is at competitive disadvantage. However, by maintaining and building on its core competences, NTU can perhaps minimise any potential price-specific customer drift. Nonetheless, student behaviour needs to be monitored carefully to identify whether the findings of this document are evidence of a short-run reaction or the beginning of a new set of trends.

This is discussed further in Chapter 8: Reflections and directions for further research.

## **Chapter 8 - Reflections and directions for further research**

This thesis has been successful to the extent that it has been able to employ existing secondary data to monitor and evaluate student behaviour occurring both before and after the 2012 changes to student funding. The investigation suggests that there has been some change to the student population at NTU in terms of its socio-economic composition. However, for the most part there has been no change at NTU in the choices that students make following the introduction of higher fees. The inclusion of the same data relating to other English universities would have enhanced the value of the research. Given the limited timescale after the introduction of higher tuition fees (two years of enrolment data and three years of application data), the findings perhaps cannot be considered to present a robust case. However, the findings do provide a useful illustration of the NTU student population immediately following the increase in tuition fees. This section discusses the contributions made by this thesis and reflects on the research undertaken and suggests directions for further research.

### **Contributions made by this Thesis**

#### *Contribution to Practice*

As NTU has entered the new reality of higher tuition fees, there has been limited change to the business processes that have been accepted practices for over ten years. Additionally, there has been limited analysis at the corporate level into the demographic and choice-making nature of the students enrolling at Nottingham Trent University following the introduction of higher fees in September 2012. The focus has been on recruiting students to meet student number targets that enable the university's financial model to function effectively. The findings of this thesis provides a nuanced analysis of the nature of the student body in terms of socio-economic composition, location from which specific courses and academic subjects recruit, academic ability by subject the likelihood of choosing one subject over another. The findings contained in this thesis provide clear empirical evidence of changes in the nature of the student body which can be used to inform and influence key business practices such as marketing, finance and admissions policies.

### *Contribution to Knowledge*

The majority of the literature reviewed in this thesis concentrates on the individual elements of the decision-making process that students adopt when making choices about higher education and addresses such issues including the participation of socio-economic groups from non-traditional backgrounds and subject choice. Some of the literature suggests how tuition fees may influence participation of certain socio-economic groups, yet tends to concentrate on those students from lower-income backgrounds rather than the student body as a whole. Likewise, there has been some limited work on how students react to increasing costs of higher education through mitigating actions of staying at home to study, yet this, also, is mostly considered in the context of lower socio-economic groups rather than across the entire student population. There is a gap in the dialogue around the impact that tuition has on subject choice and very little work done to understand how universities react in the light of increased fees. It is this gap in current research that this thesis seeks to help address. Furthermore, this thesis, albeit using only a single case study, does question the conventional wisdom regarding the consequences of increasing tuition fees, and suggests: a reduction in the proportion of students from the most deprived homes not accessing higher education; students staying at home in order to mitigate the higher costs of university and; the 'discounting' by universities through a reduction in tuition fees of the ART to maintain the demand of students, do not necessarily hold true.

### *Conceptual Contribution*

In order to assess the contribution this thesis had made conceptually, it is necessary to reflect on the conceptual model developed and used in Document Four (Figure 4). This model suggests that the decision to attend university is multi-faceted and that tuition fees are one element of influence amongst many. There has been an apparent tripling of tuition fees for English-domiciled students; and should the same increase in price be applied to another good or services, such as a car, it would not be unreasonable to expect that the demand for that car would diminish and the only customers able to afford to purchase that car would be the most affluent members of society. However, in the case of NTU there has been no apparent reduction in the number of students from lower socio-economic groups accessing university. Furthermore, the findings suggest there has actually been an increase, albeit small, in the number of students coming from the most deprived homes. This would suggest that the immediate impact of fees appear small in the context of all other influences over the prospective student's decisions about attending university.

Conceptually, the characteristics of the student could be considered the most significant influence over decisions about attending university. The use of the combined IMD score in this thesis to classify students into Quartiles facilitated the analysis of a number of student characteristics; Socio-Economic Group, Parental Education, Family Background and Social Context. The findings suggest that IMD Quartile to which the student belongs influences the likelihood of enrolment at NTU, the choice of subject and academic attainment on entry to NTU. The benefits sought from University are aligned to Socio-Economic Background, with a clear relative likelihood of certain demographic groups choosing certain subjects over others. However, whilst students are potentially required to achieve a certain level of academic attainment in order to enroll at NTU, the Admission Policies of the university cannot be separated completely from the academic ability of the potential student as, as the points of application the ART will signal to students whether NTU is a suitable choice (self-selection) as will the subsequent actions of NTU during the period of confirmation and clearing, where students are accepted onto courses with academic tariffs lower than the ART in order to match the supply of places to demand.

The findings imply that university characteristics are very much linked to the characteristics of the students, and it is these characteristics that determine the preferences and perception of the university location and reputation, the courses offered and the sense of fit. As discussed previously, admissions policies of the university and the academic ability of the target student population cannot be separated.

Therefore, the conceptual contribution of this thesis is the suggestion that, in the context of a sizable increase in tuition fees, the most significant influence over prospective students' decisions about going to university remain: Socio-Economic Status, Academic Ability, Benefits Sought from University, Parental Education, Family Background and Social Context.

## **Reflections**

From a personal point of view, this thesis has provided the opportunity to undertake an analysis of a large data set and to understand some statistical analysis techniques. In reflecting on the research design, the choice worked well from a mechanistic perspective, as the data was relatively easy to manipulate to generate findings. However, in some respects the final master data set contained too much information, as some interesting results were found that had very little relevance to the testing

of the hypotheses. Paradoxically, the inclusion of additional data such as student age or sex would have enhanced some of the findings. If there had been the luxury of time, this additional data could have been sourced and included. Timing was a source of frustration in that the final writing of this thesis took place in the Autumn Term of 2014/15, yet the data contained in the study extended only to the end of the 2013/14 academic year. A delay in submitting this thesis by three months could have meant the inclusion of a further year of both enrolment and application data, thus allowing the findings to have been a little more robust.

The use of a large data set (in excess of 90,000 student records) presented its own problems in terms of logistics and processing time; it was too large to store on a standard memory stick and was frequently too large to send by email when the location of the research changed between home and NTU. The use of web-based storage provided a solution to the logistics challenges, and the procuring of a higher memory computer solved the processing time issue.

The size of the data set required a very methodical process of version control and diligent labelling of tables and charts, especially as a number of the hypotheses used a common reference group such as an IMD quartile or distance, which could have very easily resulted in an incorrect analysis taking place.

In summary, aside from fairly minor issues concerning the size of the data set and the frustration of not being able to include a further year of data, the technical aspect of this research went well overall.

### **Directions for Future Research**

In terms of future research, this was a single case study with a limited amount of data relating to the student population and the choices that students made following the introduction of higher fees. Whilst some cross-university generalisations might be possible from the findings, collaboration with other universities using their sensitive student data, with a greater time frame of data, would extensively enhance the findings, for example with other universities who share a similar market position as NTU.

There are also a number of unanswered questions regarding the increase in tuition fees and its influence across higher education institutions:

- Universities are spending increasing time and resources to enhance their league table position, but to what extent do such measures influence the student's decision-making process?
- Universities seek to more attract students by changing their portfolio of courses, but what impact does this have on the student's decision-making process?
- Will there be a change in universities' strategies in terms of recruiting more international/EU students? In particular, as there is now a reduced difference in fees between English students and international/EU students and as competition to recruit students increases, will additional attention be paid to recruiting international/EU students?
- Will EU universities offering courses taught in English at a lower fee create new alternatives for students and a substantive threat to English universities?
- Higher fees generally may mean fewer students across all universities; but would charging relatively lower prices benefit or disadvantage 'new universities' such as NTU?

In reflecting on this thesis and considering directions for future research, this study's findings could be enhanced in a great number of different ways to provide some powerful research findings for use in the pedagogic and business environment that universities operate within, not only for NTU but for other universities as well.

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## APPENDICES

### Appendix 1 – Classification of Subjects into Academic or Vocational Subject Types

Key: FT = Full time

SW = Sandwich Course

Subject	Academic/Vocational
BA (H) Int Bus SW (with Span)	Vocational
BA (H) Multimedia FT	Academic
BA International Relations	Academic
BA Politics & International Rel	Academic
BA Youth Justice FT	Academic
BA(H) Accounting & Finance FT	Vocational
BA(H) Accounting & Finance SW	Vocational
BA(H) Broadcast Journalism FT	Vocational
BA(H) Bus & Edu Dev FT	Vocational
BA(H) Bus Mgmt Joint Hons FT	Vocational
BA(H) Bus Mgmt Joint Hons SW	Vocational
BA(H) Bus. Man. & Entrep. FT	Vocational
BA(H) Bus. Man. & Entrep. SW	Vocational
BA(H) Bus. Man. and HR. SW	Vocational
BA(H) Bus.Man & Economics FT	Vocational

BA(H) Bus.Man. & Acc & Fin. SW	Vocational
BA(H) Business Economics FT	Academic
BA(H) Business Economics SW	Academic
BA(H) Business FT	Vocational
BA(H) Business Info Management SW	Vocational
BA(H) Business Management FT	Vocational
BA(H) Business Mgmnt (In-Comp)	Vocational
BA(H) Business SW	Vocational
BA(H) Childhood Studies FT	Vocational
BA(H) Com & Sec & Film & TV FT	Academic
BA(H) Comm & Soc & Media FT	Vocational
BA(H) Comm & Soct & Eng FT	Academic
BA(H) Comm & Soct & Hist FT	Academic
BA(H) Comm & Soct & Ling FT	Academic
BA(H) Comm & Soct & Phil FT	Academic
BA(H) Comm & Soct Int FT	Academic
BA(H) Costume Des & Making FT	Academic
BA(H) Criminology FT	Academic
BA(H) Decorative Arts FT	Academic
BA(H) Design & Tech Educ FT	Vocational
BA(H) Design for Film & TV FT	Academic
BA(H) Early Yrs Bus & Ed FT	Vocational
BA(H) Early Yrs Psych & Edu FT	Vocational
BA(H) EarlyYrs & BusinessEd FT	Vocational
BA(H) Econ Finance & Bankng FT	Academic
BA(H) Econ Finance & Bankng SW	Academic
BA(H) Economics FT	Academic
BA(H) Economics SW	Academic
BA(H) Eng & Global Studies FT	Academic
BA(H) Eng & Int Relations FT	Academic
BA(H) Eng & Linguistics FT	Academic
BA(H) Eng & Philosophy FT	Academic
BA(H) Eng with Creative Wri FT	Academic
BA(H) English & Film & TV FT	Academic
BA(H) English & History FT	Academic
BA(H) English and Media FT	Academic
BA(H) English and TESOL FT	Academic
BA(H) English FT	Academic
BA(H) Erly Yrs and Edu Dev FT	Vocational
BA(H) Erly Yrs&Spec&Incl Ed FT	Vocational
BA(H) Euro Stud & Film&Tel FT	Academic
BA(H) Euro Stud & History FT	Academic
BA(H) Euro Stud & Int Rel FT	Academic
BA(H) Euro Stud & Media FT	Academic
BA(H) Euro Stud & Philosoph FT	Academic
BA(H) Fash Accessory Design FT	Academic
BA(H) Fashion & Textile Mgt SW	Academic
BA(H) Fashion Comm & Promotion	Academic

BA(H) Fashion Design FT	Academic
BA(H) Fashion KnitDes& KTex SW	Academic
BA(H) Fashion Management SW	Academic
BA(H) Fashion Marketg & Brand	Academic
BA(H) Fine Art FT	Academic
BA(H) Flm&Tel & Linguistics FT	Academic
BA(H) Flm&Tel & Philosophy FT	Academic
BA(H) Flm&Tel and History FT	Academic
BA(H) Flm&Tel and Int Rel FT	Academic
BA(H) French & Euro Stud SW	Academic
BA(H) French and English SW	Academic
BA(H) Furniture & Prod Des FT	Academic
BA(H) Furniture & Prod Des SW	Academic
BA(H) Ger & Span SW	Academic
BA(H) German & Philosophy SW	Academic
BA(H) German & TESOL SW	Academic
BA(H) Glob Stud & Int Rel FT	Academic
BA(H) Glob Studies & Hist FT	Academic
BA(H) Glob Studies & Ling FT	Academic
BA(H) Glob Studies & Media FT	Academic
BA(H) Glob Studies & Phil FT	Academic
BA(H) Glob Studies & Tesol FT	Academic
BA(H) Graphic Design FT	Academic
BA(H) Health & Social Care FT	Academic
BA(H) Hist & Int Relations FT	Academic
BA(H) History & Linguistics FT	Academic
BA(H) History & Media FT	Academic
BA(H) History & Philosophy FT	Academic
BA(H) History & Politics FT	Academic
BA(H) History FT	Academic
BA(H) Int Business (w French) FT	Vocational
BA(H) Int Fashion Bus (1yr) FT	Academic
BA(H) Interior Arch & Desn FT	Academic
BA(H) Interior Arch & Desn SW	Academic
BA(H) International Bus FT	Vocational
BA(H) International Relatns FT	Academic
BA(H) Internat'l Business SW	Vocational
BA(H) Ital & Euro Stud SW	Academic
BA(H) Ital & Linguistics SW	Academic
BA(H) Italian & English SW	Academic
BA(H) Italian & Flm&Tel SW	Academic
BA(H) Italian & History SW	Academic
BA(H) Italian & Int Rel SW	Academic
BA(H) Italian & Media SW	Academic
BA(H) Italian & TESOL SW	Academic
BA(H) Joint Hon Modern Lang FT	Academic
BA(H) Joint Hon Modern Lang SW	Academic
BA(H) Joint Hons Humanities FT	Academic

BA(H) Joint Hons Humanities SW	Academic
BA(H) Joint Hons in Edu FT	Vocational
BA(H) Linguistics & Int Rel FT	Academic
BA(H) Linguistics & Media FT	Academic
BA(H) Linguistics & Philos FT	Academic
BA(H) Man Chin & Glob Stud SW	Academic
BA(H) Management FT	Vocational
BA(H) Mand Chin & Int Rel SW	Academic
BA(H) Mand Chin and Film TV SW	Academic
BA(H) Mand Chinese & Ling SW	Academic
BA(H) Mandarin Chin & Eng SW	Academic
BA(H) Marketing Des & Comm FT	Vocational
BA(H) Marketing Des & Comm SW	Vocational
BA(H) Media & Int Rel FT	Academic
BA(H) Media & Philosophy FT	Academic
BA(H) Media (with pathways) FT	Vocational
BA(H) Media and Film & TV FT	Academic
BA(H) Philos and Int Rel FT	Academic
BA(H) Photography FT	Academic
BA(H) Politics FT	Academic
BA(H) Primary Education FT	Vocational
BA(H) Print Journalism FT	Vocational
BA(H) Product Design FT	Academic
BA(H) Product Design SW	Academic
BA(H) Psych & Edu Dev FT	Vocational
BA(H) Psych Bus & Edu FT	Vocational
BA(H) Psych& Spec & Incl Ed FT	Vocational
BA(H) Sec Design & Tech Edu FT	Vocational
BA(H) Social Welfare FT	Academic
BA(H) Social Work FT	Academic
BA(H) Sociology & Politics FT	Academic
BA(H) Sociology FT	Academic
BA(H) Span & Euro Studies SW	Academic
BA(H) Span & Glob Studies SW	Academic
BA(H) Span & Int Relations SW	Academic
BA(H) Span & Italian SW	Academic
BA(H) Span & Mand Chin SW	Academic
BA(H) Span Film & TV SW	Academic
BA(H) Spanish & English SW	Academic
BA(H) Spanish & Hist SW	Academic
BA(H) Spanish & Ling SW	Academic
BA(H) Spanish & Media SW	Academic
BA(H) Spanish & Tesol SW	Academic
BA(H) Spec& Incl Ed&Edu Dev FT	Vocational
BA(H) Sprrt & Leis & Edu Dev FT	Vocational
BA(H) Sprrt & Leis Bus & Edu FT	Vocational
BA(H) Sprrt&Leis Psych & Ed FT	Vocational
BA(H) Sprrt&Leis & Spec&Inc Ed FT	Vocational

BA(H) TESOL & Int Rel FT	Academic
BA(H) Textile Design FT	Academic
BA(H) Theatre Design FT	Academic
BA(H) Youth & Prof Career Guid	Academic
BA(H) Youth Justice FT(Top Up)	Academic
BA(H) Youth Studies FT	Academic
BA(H)Bus. Man. & Economics SW	Vocational
BA(H)Bus. Man. & Hum. Res. FT	Vocational
BA(H)Bus. Man. and Mktg. SW	Vocational
BA(H)Bus.Man. Acc & Fin FT	Vocational
BA(H)Com & Soc and Glob Stu FT	Academic
BA(H)Early Yrs&Spec&Incl Ed FT	Vocational
BA(H)EarlyYrs & Psychology FT	Vocational
BA(H)Ed Studies & Sports Ed FT	Vocational
BA(H)EdStud &Spec & Incl Ed FT	Vocational
BA(H)EdStudies & BusinessEd FT	Vocational
BA(H)EdStudies & EarlyYrs FT	Vocational
BA(H)EdStudies & Psychology FT	Vocational
BA(H)Europ.Stud&LinguisticsFT	Academic
BA(H)Fren and Comm & Soct SW	Academic
BA(H)French & Film & TV SW	Academic
BA(H)French & German SW	Academic
BA(H)French & History SW	Academic
BA(H)French & IR SW	Academic
BA(H)French & Italian SW	Academic
BA(H)French & Linguistics SW	Academic
BA(H)French & Mand Chinese SW	Academic
BA(H)French & Media SW	Academic
BA(H)French & Philosophy SW	Academic
BA(H)French & Spanish SW	Academic
BA(H)German & Euro Studies SW	Academic
BA(H)German & History SW	Academic
BA(H)German & IR SW	Academic
BA(H)German & Italian SW	Academic
BA(H)German & Linguistics SW	Academic
BA(H)German & Mand Chinese SW	Academic
BA(H)German & Media SW	Academic
BA(H)Mand Chin and EuroStud SW	Academic
BA(H)Psych & Business Ed FT	Vocational
BA(H)SportEd & Spec& InclEd FT	Vocational
BA(H)Sports Ed & Psychology FT	Vocational
BA(H)SportsEd & BusinessEd FT	Vocational
BA(Hons) Man. & Marketing FT	Vocational
BA(Hons) Marketing FT	Vocational
BA(Hons) Marketing SW	Vocational
BArch (H) Architecture	Vocational
BEng(H) Civil Engineering FT	Vocational
BEng(H) Civil Engineering SW	Vocational

BSc (H) Computing SW	Vocational
BSc (H) Environmental C&CM FT	Vocational
BSc (Hons) Chemistry FT	Academic
BSc(H) Animal Biology FT	Vocational
BSc(H) Appl Biomedical Sc FT	Academic
BSc(H) Architectural Tech FT	Vocational
BSc(H) Architectural Tech SW	Vocational
BSc(H) Astronomy (Joint) FT	Academic
BSc(H) Biochemistry FT	Academic
BSc(H) Biological Sciences SW	Academic
BSc(H) BiolSci (Bio&Micro) SW	Academic
BSc(H) BiolSci (BiomedSci) SW	Academic
BSc(H) BiolSci (Ecol&Env) SW	Academic
BSc(H) BiolSci (Phys&Pharm) SW	Academic
BSc(H) Biomedical Sci(Interdi)	Academic
BSc(H) Biomedical Science FT	Academic
BSc(H) Building Surveying FT	Vocational
BSc(H) Building Surveying SW	Vocational
BSc(H) Chemical Sciences FT	Academic
BSc(H) Civil Engineering FT	Vocational
BSc(H) Civil Engineering SW	Vocational
BSc(H) Coaching & Sport Sci FT	Academic
BSc(H) Comp Sci (Games Tec) FT	Vocational
BSc(H) Comp Sci (Games Tec) SW	Vocational
BSc(H) Comp Syst (Networks) FT	Vocational
BSc(H) Comp Syst (Networks) SW	Vocational
BSc(H) Comp Syst Eng FT	Vocational
BSc(H) Comp Syst Eng SW	Vocational
BSc(H) Comp Systems (F&S) FT	Vocational
BSc(H) Comp Systems (F&S) SW	Vocational
BSc(H) Computer Aid ProdDes SW	Academic
BSc(H) Computer Sci & Maths FT	Academic
BSc(H) Computer Sci & Maths SW	Academic
BSc(H) Computer Science FT	Vocational
BSc(H) Computer Science SW	Vocational
BSc(H) Computer Studies FT	Vocational
BSc(H) Computer Studies SW	Vocational
BSc(H) Computing(In Company)FT	Vocational
BSc(H) Construct & Prop Mgt SW	Vocational
BSc(H) Construction Mgt FT	Vocational
BSc(H) Construction Mgt SW	Vocational
BSc(H) Env & Leisure Mgmt FT	Academic
BSc(H) Environmental Cons'n FT	Vocational
BSc(H) Environmental ScienceFT	Vocational
BSc(H) Equestrian Psych FT	Vocational
BSc(H) Equine Sports Sci FT	Vocational
BSc(H) Equine SportSci (Psy)FT	Vocational
BSc(H) Exercise Nut & H'lth FT	Academic

BSc(H) Financial Maths FT	Academic
BSc(H) Financial Maths SW	Academic
BSc(H) Forensic Biol (Ecol) FT	Academic
BSc(H) Forensic Biology FT	Academic
BSc(H) Forensic Sci (Phys) FT	Academic
BSc(H) Forensic Science FT	Academic
BSc(H) ForensicBio (MolBio) FT	Academic
BSc(H) Geography (Physical) FT	Academic
BSc(H) Geography FT	Academic
BSc(H) Health & Environment SW	Academic
BSc(H) Healthcare Science FT	Academic
BSc(H) Info and Comm Tech FT	Vocational
BSc(H) Info and Comm Tech SW	Vocational
BSc(H) Information Systems FT	Vocational
BSc(H) Information Systems SW	Vocational
BSc(H) Mathematics FT	Academic
BSc(H) Microbiology FT	Academic
BSc(H) Pharmacology FT	Academic
BSc(H) Pharmacology SW	Academic
BSc(H) Phys With Astrophys FT	Academic
BSc(H) Phys with Nucl Tech FT	Academic
BSc(H) Phys with Forensic App FT	Academic
BSc(H) Physics FT	Academic
BSc(H) Plan & Property Dev SW	Vocational
BSc(H) Planning & Develop' FT	Vocational
BSc(H) Planning & Develop' SW	Vocational
BSc(H) Product Design FT	Academic
BSc(H) Product Design SW	Academic
BSc(H) Prop Finance & Inves FT	Vocational
BSc(H) Prop Finance & Inves SW	Vocational
BSc(H) Prop Invest & Fin SW	Vocational
BSc(H) Psych w Sport Sci FT	Academic
BSc(H) Psychol w/ Criminol FT	Academic
BSc(H) Psychology FT	Academic
BSc(H) Psychology w/Sociol FT	Academic
BSc(H) Quantity Sur & CCM FT	Vocational
BSc(H) Quantity Sur & CCM SW	Vocational
BSc(H) Quantity Surveying FT	Vocational
BSc(H) Quantity Surveying SW	Vocational
BSc(H) Real Estate FT	Vocational
BSc(H) Real Estate Managemt SW	Vocational
BSc(H) Real Estate SW	Vocational
BSc(H) Second. Physical Sci FT	Vocational
BSc(H) Secondary Science Ed FT	Vocational
BSc(H) Software Engineering FT	Vocational
BSc(H) Software Engineering SW	Vocational
BSc(H) Sport & Exercise Sci FT	Academic
BSc(H) Sport Leisure & OM FT	Academic

BSc(H) Sport Sci & Maths FT	Academic
BSc(H) Sport Sci & Mgmt FT	Academic
BSc(H) Technological Physic FT	Academic
BSc(H) Wildlife Conservat'n FT	Vocational
BSc(H) Zoo Biology FT	Vocational
BSc(H) Digital Media Techngy FT	Vocational
BSc(H) Digital Media Techngy SW	Vocational
BSc(Hons) Pharm & Medi Chem FT	Academic
BSc(Hons) Sec D&T Ed FT	Vocational
BSc (Hons) Librarianship & Information Science FT	Vocational
LLB (Hons) Business Law	Vocational
LLB (Hons) European Law FT	Vocational
LLB(H) International Law FT	Vocational
LLB(H) Law and Prof Prac SW	Vocational
LLB(H) Law FT	Vocational
LLB(H) Law SW	Vocational
LLB(H) Law with Business FT	Vocational
LLB(H) Law with Criminology FT	Vocational
LLB(H) Law with Psychology FT	Vocational
LLB(H) Law with Spanish FT	Vocational

## Appendix 2 – Subjects by Academic School

Academic School	Subject
Animal, Rural & Environmental Sciences	BSc (H) Environmental C&CM FT
Animal, Rural & Environmental Sciences	BSc(H) Animal Biology FT
Animal, Rural & Environmental Sciences	BSc(H) Environmental Cons'n FT
Animal, Rural & Environmental Sciences	BSc(H) Environmental ScienceFT
Animal, Rural & Environmental Sciences	BSc(H) Equestrian Psych FT
Animal, Rural & Environmental Sciences	BSc(H) Equine Sports Sci FT
Animal, Rural & Environmental Sciences	BSc(H) Equine SportSci (Psy)FT
Animal, Rural & Environmental Sciences	BSc(H) Wildlife Conservat'n FT
Animal, Rural & Environmental Sciences	BSc(H) Zoo Biology FT
Architecture, Design & Built Environment	BArch (H) Architecture
Architecture, Design & Built Environment	BEng(H) Civil Engineering FT
Architecture, Design & Built Environment	BEng(H) Civil Engineering SW
Architecture, Design & Built Environment	BSc(H) Architectural Tech FT
Architecture, Design & Built Environment	BSc(H) Architectural Tech SW
Architecture, Design & Built Environment	BSc(H) Building Surveying FT
Architecture, Design & Built Environment	BSc(H) Building Surveying SW
Architecture, Design & Built Environment	BSc(H) Civil Engineering FT
Architecture, Design & Built Environment	BSc(H) Civil Engineering SW
Architecture, Design & Built Environment	BSc(H) Construct & Prop Mgt SW
Architecture, Design & Built Environment	BSc(H) Construction Mgt FT
Architecture, Design & Built Environment	BSc(H) Construction Mgt SW



Architecture, Design & Built Environment	BSc(H) Plan & Property Dev SW
Architecture, Design & Built Environment	BSc(H) Planning & Develop' FT
Architecture, Design & Built Environment	BSc(H) Planning & Develop' SW
Architecture, Design & Built Environment	BSc(H) Prop Finance & Inves FT
Architecture, Design & Built Environment	BSc(H) Prop Finance & Inves SW
Architecture, Design & Built Environment	BSc(H) Prop Invest & Fin SW
Architecture, Design & Built Environment	BSc(H) Quantity Sur & CCM FT
Architecture, Design & Built Environment	BSc(H) Quantity Sur & CCM SW
Architecture, Design & Built Environment	BSc(H) Quantity Surveying FT
Architecture, Design & Built Environment	BSc(H) Quantity Surveying SW
Architecture, Design & Built Environment	BSc(H) Real Estate FT
Architecture, Design & Built Environment	BSc(H) Real Estate Managemt SW
Architecture, Design & Built Environment	BSc(H) Real Estate SW
Art & Design	BA (H) Multimedia FT
Art & Design	BA(H) Costume Des & Making FT
Art & Design	BA(H) Decorative Arts FT
Art & Design	BA(H) Design for Film & TV FT
Art & Design	BA(H) Fash Accessory Design FT
Art & Design	BA(H) Fashion & Textile Mgt SW
Art & Design	BA(H) Fashion Comm & Promotion
Art & Design	BA(H) Fashion Design FT
Art & Design	BA(H) Fashion KnitDes& KTex SW
Art & Design	BA(H) Fashion Management SW
Art & Design	BA(H) Fashion Marketg & Brand
Art & Design	BA(H) Fine Art FT
Art & Design	BA(H) Furniture & Prod Des FT
Art & Design	BA(H) Furniture & Prod Des SW
Art & Design	BA(H) Graphic Design FT
Art & Design	BA(H) Int Fashion Bus (1yr) FT
Art & Design	BA(H) Interior Arch & Desn FT
Art & Design	BA(H) Interior Arch & Desn SW
Art & Design	BA(H) Photography FT
Art & Design	BA(H) Product Design FT
Art & Design	BA(H) Product Design SW
Art & Design	BA(H) Textile Design FT
Art & Design	BA(H) Theatre Design FT
Art & Design	BSc(H) Computer Aid ProdDes SW
Art & Design	BSc(H) Product Design FT
Art & Design	BSc(H) Product Design SW
Arts & Humanities	BA (H) Int Bus SW (with Span)
Arts & Humanities	BA International Relations
Arts & Humanities	BA(H) Broadcast Journalism FT
Arts & Humanities	BA(H) Com & Sec & Film & TV FT
Arts & Humanities	BA(H) Com & Soc & Film & TV FT
Arts & Humanities	BA(H) Comm & Soc & Media FT
Arts & Humanities	BA(H) Comm & Soct & Eng FT
Arts & Humanities	BA(H) Comm & Soct & Hist FT
Arts & Humanities	BA(H) Comm & Soct & Ling FT

Arts & Humanities	BA(H) Comm & Soct & Phil FT
Arts & Humanities	BA(H) Comm & Soct Int FT
Arts & Humanities	BA(H) Eng & Global Studies FT
Arts & Humanities	BA(H) Eng & Int Relations FT
Arts & Humanities	BA(H) Eng & Linguistics FT
Arts & Humanities	BA(H) Eng & Philosophy FT
Arts & Humanities	BA(H) Eng with Creative Wri FT
Arts & Humanities	BA(H) English & Film & TV FT
Arts & Humanities	BA(H) English & History FT
Arts & Humanities	BA(H) English and Media FT
Arts & Humanities	BA(H) English and TESOL FT
Arts & Humanities	BA(H) English FT
Arts & Humanities	BA(H) Euro Stud & Film&Tel FT
Arts & Humanities	BA(H) Euro Stud & History FT
Arts & Humanities	BA(H) Euro Stud & Int Rel FT
Arts & Humanities	BA(H) Euro Stud & Media FT
Arts & Humanities	BA(H) Euro Stud & Philosoph FT
Arts & Humanities	BA(H) Flm&Tel & Linguistics FT
Arts & Humanities	BA(H) Flm&Tel & Philosophy FT
Arts & Humanities	BA(H) Flm&Tel and History FT
Arts & Humanities	BA(H) Flm&Tel and Int Rel FT
Arts & Humanities	BA(H) French & Euro Stud SW
Arts & Humanities	BA(H) French and English SW
Arts & Humanities	BA(H) Ger & Span SW
Arts & Humanities	BA(H) German & Philosophy SW
Arts & Humanities	BA(H) German & TESOL SW
Arts & Humanities	BA(H) Glob Studies & Hist FT
Arts & Humanities	BA(H) Glob Studies & Ling FT
Arts & Humanities	BA(H) Glob Studies & Media FT
Arts & Humanities	BA(H) Glob Studies & Phil FT
Arts & Humanities	BA(H) Glob Studies & Tesol FT
Arts & Humanities	BA(H) Hist & Int Relations FT
Arts & Humanities	BA(H) History & Linguistics FT
Arts & Humanities	BA(H) History & Media FT
Arts & Humanities	BA(H) History & Philosophy FT
Arts & Humanities	BA(H) History & Politics FT
Arts & Humanities	BA(H) History FT
Arts & Humanities	BA(H) Ital & Euro Stud SW
Arts & Humanities	BA(H) Ital & Linguistics SW
Arts & Humanities	BA(H) Italian & English SW
Arts & Humanities	BA(H) Italian & Flm&Tel SW
Arts & Humanities	BA(H) Italian & History SW
Arts & Humanities	BA(H) Italian & Int Rel SW
Arts & Humanities	BA(H) Italian & Media SW
Arts & Humanities	BA(H) Italian & TESOL SW
Arts & Humanities	BA(H) Joint Hon Modern Lang FT
Arts & Humanities	BA(H) Joint Hon Modern Lang SW
Arts & Humanities	BA(H) Joint Hons Humanities FT

Arts & Humanities	BA(H) Joint Hons Humanities SW
Arts & Humanities	BA(H) Linguistics & Int Rel FT
Arts & Humanities	BA(H) Linguistics & Media FT
Arts & Humanities	BA(H) Linguistics & Philos FT
Arts & Humanities	BA(H) Man Chin & Glob Stud SW
Arts & Humanities	BA(H) Mand Chin & Int Rel SW
Arts & Humanities	BA(H) Mand Chin and Film TV SW
Arts & Humanities	BA(H) Mand Chinese & Ling SW
Arts & Humanities	BA(H) Mandarin Chin & Eng SW
Arts & Humanities	BA(H) Media & Int Rel FT
Arts & Humanities	BA(H) Media & Philosophy FT
Arts & Humanities	BA(H) Media (with pathways) FT
Arts & Humanities	BA(H) Media and Film & TV FT
Arts & Humanities	BA(H) Philos and Int Rel FT
Arts & Humanities	BA(H) Print Journalism FT
Arts & Humanities	BA(H) Span & Euro Studies SW
Arts & Humanities	BA(H) Span & Glob Studies SW
Arts & Humanities	BA(H) Span & Int Relations SW
Arts & Humanities	BA(H) Span & Italian SW
Arts & Humanities	BA(H) Span & Mand Chin SW
Arts & Humanities	BA(H) Span Film & TV SW
Arts & Humanities	BA(H) Spanish & English SW
Arts & Humanities	BA(H) Spanish & Hist SW
Arts & Humanities	BA(H) Spanish & Ling SW
Arts & Humanities	BA(H) Spanish & Media SW
Arts & Humanities	BA(H) Spanish & Tesol SW
Arts & Humanities	BA(H) TESOL & Int Rel FT
Arts & Humanities	BA(H)Com & Soc and Glob Stu FT
Arts & Humanities	BA(H)Europ.Stud&LinguisticsFT
Arts & Humanities	BA(H)Fren and Comm & Soct SW
Arts & Humanities	BA(H)French & Film & TV SW
Arts & Humanities	BA(H)French & German SW
Arts & Humanities	BA(H)French & History SW
Arts & Humanities	BA(H)French & IR SW
Arts & Humanities	BA(H)French & Italian SW
Arts & Humanities	BA(H)French & Linguistics SW
Arts & Humanities	BA(H)French & Mand Chinese SW
Arts & Humanities	BA(H)French & Media SW
Arts & Humanities	BA(H)French & Philosophy SW
Arts & Humanities	BA(H)French & Spanish SW
Arts & Humanities	BA(H)German & Euro Studies SW
Arts & Humanities	BA(H)German & History SW
Arts & Humanities	BA(H)German & IR SW
Arts & Humanities	BA(H)German & Italian SW
Arts & Humanities	BA(H)German & Linguistics SW
Arts & Humanities	BA(H)German & Mand Chinese SW
Arts & Humanities	BA(H)German & Media SW
Arts & Humanities	BA(H)Mand Chin and EuroStud SW

Arts & Humanities	Librarianship & Information Science
Business School	BA(H) Accounting & Finance FT
Business School	BA(H) Accounting & Finance SW
Business School	BA(H) Bus Mgmt Joint Hons FT
Business School	BA(H) Bus Mgmt Joint Hons SW
Business School	BA(H) Bus. Man. & Entrep. FT
Business School	BA(H) Bus. Man. & Entrep. SW
Business School	BA(H) Bus. Man. and HR. SW
Business School	BA(H) Bus.Man & Economics FT
Business School	BA(H) Bus.Man. & Acc & Fin. SW
Business School	BA(H) Business Economics FT
Business School	BA(H) Business Economics SW
Business School	BA(H) Business FT
Business School	BA(H) Business Info Management
Business School	BA(H) Business Management FT
Business School	BA(H) Business Mgmt (In-Comp)
Business School	BA(H) Business SW
Business School	BA(H) Econ Finance & Bankng FT
Business School	BA(H) Econ Finance & Bankng SW
Business School	BA(H) Economics FT
Business School	BA(H) Economics SW
Business School	BA(H) Int Business (w French)
Business School	BA(H) International Bus FT
Business School	BA(H) Internat'l Business SW
Business School	BA(H) Management FT
Business School	BA(H) Marketing Des & Comm FT
Business School	BA(H) Marketing Des & Comm SW
Business School	BA(H)Bus. Man. & Economics SW
Business School	BA(H)Bus. Man. & Hum. Res. FT
Business School	BA(H)Bus. Man. and Mktg. SW
Business School	BA(H)Bus.Man. Acc & Fin FT
Business School	BA(Hons) Man. & Marketing FT
Business School	BA(Hons) Marketing FT
Business School	BA(Hons) Marketing SW
Education	BA(H) Bus & Edu Dev FT
Education	BA(H) Childhood Studies FT
Education	BA(H) Design & Tech Educ FT
Education	BA(H) Early Yrs Bus & Ed FT
Education	BA(H) Early Yrs Psych & Edu FT
Education	BA(H) EarlyYrs & BusinessEd FT
Education	BA(H) Erly Yrs and Edu Dev FT
Education	BA(H) Erly Yrs&Spec&Incl Ed FT
Education	BA(H) Joint Hons in Edu FT
Education	BA(H) Primary Education FT
Education	BA(H) Psych & Edu Dev FT
Education	BA(H) Psych Bus & Edu FT
Education	BA(H) Psych& Spec & Incl Ed FT
Education	BA(H) Sec Design & Tech Edu FT

Education	BA(H) Spec& Incl Ed&Edu Dev FT
Education	BA(H) Sprt & Leis & Edu Dev FT
Education	BA(H) Sprt & Leis Bus & Edu FT
Education	BA(H) Sprt&Leis Psych & Ed FT
Education	BA(H) Spt&Les & Spec&Inc Ed FT
Education	BA(H)Early Yrs&Spec&Incl Ed FT
Education	BA(H)EarlyYrs & Psychology FT
Education	BA(H)Ed Studies & Sports Ed FT
Education	BA(H)EdStud &Spec & Incl Ed FT
Education	BA(H)EdStudies & BusinessEd FT
Education	BA(H)EdStudies & EarlyYrs FT
Education	BA(H)EdStudies & Psychology FT
Education	BA(H)Psych & Business Ed FT
Education	BA(H)SportEd & Spec& InclEd FT
Education	BA(H)Sports Ed & Psychology FT
Education	BA(H)SportsEd & BusinessEd FT
Education	BSc(H) Second. Physical Sci FT
Education	BSc(H) Secondary Science Ed FT
Education	BSc(Hons) Sec D&T Ed FT
Law School	LLB (Hons) Business Law
Law School	LLB (Hons) European Law FT
Law School	LLB(H) International Law FT
Law School	LLB(H) Law and Prof Prac SW
Law School	LLB(H) Law FT
Law School	LLB(H) Law SW
Law School	LLB(H) Law with Business FT
Law School	LLB(H) Law with Criminology FT
Law School	LLB(H) Law with Psychology FT
Law School	LLB(H) Law with Spanish FT
Science & Technology	BSc (H) Computing SW
Science & Technology	BSc (Hons) Chemistry FT
Science & Technology	BSC(H) Appl Biomedical Sc FT
Science & Technology	BSc(H) Astronomy (Joint) FT
Science & Technology	BSc(H) Biochemistry FT
Science & Technology	BSc(H) Biological Sciences SW
Science & Technology	BSc(H) BiolSci (Bio&Micro) SW
Science & Technology	BSc(H) BiolSci (BiomedSci) SW
Science & Technology	BSc(H) BiolSci (Ecol&Env) SW
Science & Technology	BSc(H) BiolSci (Phys&Pharm) SW
Science & Technology	BSc(H) Biomedical Sci(Interdi)
Science & Technology	BSc(H) Biomedical Science FT
Science & Technology	BSc(H) Chemical Sciences FT
Science & Technology	BSc(H) Coaching & Sport Sci FT
Science & Technology	BSc(H) Comp Sci (Games Tec) FT
Science & Technology	BSc(H) Comp Sci (Games Tec) SW
Science & Technology	BSc(H) Comp Syst (Networks) FT
Science & Technology	BSc(H) Comp Syst (Networks) SW
Science & Technology	BSc(H) Comp Syst Eng FT

Science & Technology	BSc(H) Comp Syst Eng SW
Science & Technology	BSc(H) Comp Systems (F&S) FT
Science & Technology	BSc(H) Comp Systems (F&S) SW
Science & Technology	BSc(H) Computer Sci & Maths FT
Science & Technology	BSc(H) Computer Sci & Maths SW
Science & Technology	BSc(H) Computer Science FT
Science & Technology	BSc(H) Computer Science SW
Science & Technology	BSc(H) Computer Studies FT
Science & Technology	BSc(H) Computer Studies SW
Science & Technology	BSc(H) Computing(In Company)FT
Science & Technology	BSc(H) Env & Leisure Mgmt FT
Science & Technology	BSc(H) Exercise Nut & H'lth FT
Science & Technology	BSc(H) Financial Maths FT
Science & Technology	BSc(H) Financial Maths SW
Science & Technology	BSc(H) Forensic Biol (Ecol) FT
Science & Technology	BSc(H) Forensic Biology FT
Science & Technology	BSc(H) Forensic Sci (Phys) FT
Science & Technology	BSc(H) Forensic Science FT
Science & Technology	BSc(H) ForensicBio (MolBio) FT
Science & Technology	BSc(H) Geography (Physical) FT
Science & Technology	BSc(H) Geography FT
Science & Technology	BSc(H) Healthcare Science FT
Science & Technology	BSc(H) Info and Comm Tech FT
Science & Technology	BSc(H) Info and Comm Tech SW
Science & Technology	BSc(H) Information Systems FT
Science & Technology	BSc(H) Information Systems SW
Science & Technology	BSc(H) Mathematics FT
Science & Technology	BSc(H) Microbiology FT
Science & Technology	BSc(H) Pharmacology FT
Science & Technology	BSc(H) Pharmacology SW
Science & Technology	BSc(H) Phys With Astrophys FT
Science & Technology	BSc(H) Phys with Nucl Tech FT
Science & Technology	BSc(H) Phys wth Forensc App FT
Science & Technology	BSc(H) Physics FT
Science & Technology	BSc(H) Psych w Sport Sci FT
Science & Technology	BSc(H) Psychol w/ Criminol FT
Science & Technology	BSc(H) Psychology FT
Science & Technology	BSc(H) Psychology w/Sociol FT
Science & Technology	BSc(H) Software Engineering FT
Science & Technology	BSc(H) Software Engineering SW
Science & Technology	BSc(H) Sport & Exercise Sci FT
Science & Technology	BSc(H) Sport Leisure & OM FT
Science & Technology	BSc(H) Sport Sci & Maths FT
Science & Technology	BSc(H) Sport Sci & Mgmt FT
Science & Technology	BSc(H) Technological Physic FT
Science & Technology	BSc(H)Digital Media Techngy FT
Science & Technology	BSc(H)Digital Media Techngy SW
Science & Technology	BSc(Hons) Pharm & Medi Chem FT

Social Sciences	BA Politics & International Rel
Social Sciences	BA Youth Justice
Social Sciences	BA(H) Criminology FT
Social Sciences	BA(H) Glob Stud & Int Rel FT
Social Sciences	BA(H) Health & Social Care FT
Social Sciences	BA(H) International Relatns FT
Social Sciences	BA(H) Politics FT
Social Sciences	BA(H) Social Welfare FT
Social Sciences	BA(H) Social Work FT
Social Sciences	BA(H) Sociology & Politics FT
Social Sciences	BA(H) Sociology FT
Social Sciences	BA(H) Youth & Prof Career Guid
Social Sciences	BA(H) Youth Justice FT(Top Up)
Social Sciences	BA(H) Youth Studies FT
Social Sciences	BSc(H) Health & Environment SW